

No. : 36



bulletin

DEPARTMENT OF AGRICULTURE,
GUJARAT STATE, AHMEDABAD - 6

CROP ZONES OF GUJARAT

By

Gunvant A. Patel
Director of Agriculture

G. B. Kasad
Dy. Director of Agriculture

R. L. Shah
Dy. Director of Agriculture

I N D E X

	<u>Page No.</u>
1. General.	1
2. Climate, crop seasons.	4
3. Sowing and harvest periods of important crops.	5
4. Crop zones.	8
Zone I. Residual Soil-Maize.	9
Zone II. Residual Soil-Cotton.	10
Zone III. Residual Soil-Paddy.	11
Zone IV. Deep black Soil-Cotton.	11-12
Zone V. Sandy Loam Bajra-Tobacco.	12
Zone VI Loamy Sand-Bajri-Cotton.	14
Zone VII. Sandy Soil-Bajra-Pulse.	15
Zone VIII. Clay Alluvial Soil-Cotton-Dry Wheat.	16
Zone IX. Residual Soil-Groundnut.	19
Zone X. Littoral-Cotton-Dry Wheat.	20
Zone XI. Littoral-Paddy-Wal.	20-21
Zone XII. Littoral-Groundnut-Bajra.	21
5. Zone variation in rainfall, temperature, relative humidity, and soil types with sowing-harvesting periods.	22
6. Summary.	25
7. Acknowledgement.	26

With best compliments from

The Director of Agriculture

Gujarat State

Krishi Bhavan, Paldi, Ahmedabad

Maps

Page No.

Map 1.

Map of Gujarat showing physical features with taluka and district boundaries. I

Map 2.

Isohyte map of Gujarat State. II

Map 3.

Map showing crop zones of Gujarat State. III

/Graphs /

- A 1. Graph showing weekwise sowing and harvesting of BAJRI, along with average weekly maximum and minimum temperature and rainfall in the state. IV
- A 2. Graph showing weekwise sowing and harvesting of GROUNDNUT, along with average weekly maximum and minimum temperature and rainfall in the state. V
- A 3. Graph showing weekwise sowing and harvesting of COTTON, alongwith average weekly maximum and minimum temperature and rainfall in the State. VI
- A 4. Graph showing weekwise harvesting of PADDY. VII
- A 5. Graph showing weekwise sowing and harvesting of MAIZE, along with average weekly maximum and minimum temperature and rainfall in the state. VIII
- A 6. Graph showing weekwise sowing and harvesting of WHEAT, alongwith average weekly maximum and minimum, temperature and rainfall in the state. IX
- B 01 Zone I. Residual Soil-Maize zone. X
Graph showing weekwise sowing, harvesting of predominant crops of the zone, along with the average rainfall of the zone.
- B 02 Zone II Residual Soil-Cotton zone. XI
Graph showing weekwise sowing, harvesting of predominant crops of the zone, along with average rainfall of the zone.
- B 03 Zone III Residual Soil-Paddy zone. XII
Graph showing weekwse sowing, harvesting of predominant crops of the zone, along with average rainfall of the zone.
- B 04 Zone IV Deep black Soil-Cotton zone. XIII
Graph showing weekwise sowing, harvesting of predominant crops of the zone, along with average rainfall of the zone.
- B 05 Zone V Sandy Loam Soil-Bajri-Tobacco zone. XIV
Graph showing weekwise sowing, harvesting of predominant crops of the zone, along with average rainfall of the zone.
- B 06 Zone VI Loamy Sand Soil-Bajri-Cotton zone. XV
Graph showing weekwise sowing, harvesting of predominant crops of the zone, along with average rainfall of the zone.

B 07	Zone VII Sandy Soil-Bajri-Pulses zone. Graph showing weekwise sowing, harvesting of predominant crops of the zone, along with average rainfall of the zone.	XVI
B 08	Zone VIII Clay Alluvial Soil-Cotton/Dry Wheat zone. Graph showing weekwise sowing, harvesting of predominant crops of the zone, along with average rainfall of the zone.	XVII
B 09	Zone IX Residual Soil-Groundnut zone. Graph showing weekwise sowing, harvesting of predominant crops of the zone, along with average rainfall of the zone.	XVIII
B 10	Zone X Littoral Soil-Cotton/Dry Wheat zone. Graph showing weekwise sowing, harvesting of predominant crops of the zone, along with average rainfall of the zone.	XIX
B 11	Zone XI Littoral Soil-Paddy-Wal zone. Graph showing weekwise sowing, harvesting of predominant crops of the zone, along with average rainfall of the zone.	XX
B 12	Zone XII Littoral Soil-Groundnut-Bajri zone. Graph showing weekwise sowing, harvesting of predominant crops of the zone, along with average of the zone.	XXI

/Tables/

Table 1.0

Rainfall, soil type, sowing and harvesting periods and crop pattern in Gujarat State. XXIII-XXIII
XXIII(A) - XXIII(B)

Table 2.0

Weekly average rainfall in the crop zones. XXIV

Table 2.1

Monthly average rainfall in the crop zones. XXV

Table 2.2

Frequency distribution of annual rainfall reliability. XXVI

Table 3.0

Textural classification of soils of crop zones. XXVII

Table 4.0

Percentage of fields of Bajra sown in different weeks in some zones. XXVIII

Table 4.0 (A)

Percentage of fields of Bajra harvested in different weeks in some zones. XXIX

Table 4.1

Percentage of fields of Groundnut sown in different weeks in some zones. XXX

... IV ...

Table 4.1. (A)

Percentage of fields of Groundnut harvested in different weeks in some zone. XXXI

Table 4.2

Percentage of fields of Cotton sown in different weeks in some zones. XXXII
XXXII (A)

Table 4.2 (A)

Percentage of fields of Cotton harvested in different weeks in some zones. (First Picking) XXXIII

XXXIII (A)

XXXIII (B)

XXXIII (C)

XXXIII (D)

Table 4.2 (B)

Percentage of fields of cotton harvested in different weeks in some zones (Last picking) XXXIII

Table 4.3

Percentage of fields of Maize sown in different weeks in some zones. XXXIV

Table 4.3 (A)

Percentage of fields of Maize harvested in different weeks in some zones. XXXV

Table 4.4 (A)

Percentage of fields of Paddy harvested in different weeks in some zones. XXXVI

Table 4.5

Percentage of fields of wheat sown in different weeks in some zones. XXXVII

Table 4.5 (A)

Percentage of fields of Wheat harvested in different weeks in some zones. XXXVIII

Table 5.00

Percentage of net sown area under groups of crops in the crop zones of Gujarat State. XXXIX

Table 5.01

Zone I. Residual Soil-Maize zone. XXX XXXX
Percentage of net sown area under groups of crops in talukas.

Table 5.02

Zone II. Residual Soil-Cotton Zone. XXXXI
Percentage of net sown area under groups of crops in talukas.

Table 5.03

Zone III. Residual Soil-Paddy zone. XXXXII
Percentage of net sown area under groups of crops in talukas.

Table 5.04

Zone IV. Deep black Soil-Cotton zone.
Percentage of net sown area under groups of crops
in talukas.

XXXXIII

Table 5.05

Zone V. Sandy Loam Soil-Bajri-Tobacco zone.
Percentage of net sown area under groups of crops
in talukas.

XXXXIV

Table 5.06

Zone VI. Loamy Sand Soil-Bajri-Cotton zone.
Percentage of net sown area under groups of crops
in talukas.

XXXXV

Table 5.07

Zone VII. Sandy Soil-Bajri-Pulses zone.
Percentage of net sown area under groups
of crops in talukas.

XXXXVI

Table 5.08

Zone VIII. Clay Alluvial Soil-Cotton/Dry Wheat zone. XXXXVII
Percentage of net sown area under groups
of crops in talukas.

Table 5.09

Zone IX. Residual Soil-Groundnut zone.
Percentage of net sown area under groups
of crops in talukas.

XXXXVIII & ~~IX~~ IL

Table 5.10

Zone X. Littoral Cotton/Dry Wheat zone.
Percentage of net sown area under grups
of crops in talukas.

L

Table 5.11

Zone XI. Littoral Paddy-Wal zone.
Percentage of net sown area under groups
of crops in talukas.

L

Table 5.12

Zone XII. Littoral Groundnut-Bajri zone.
Percentage of net sown area under groups
of crops in talukas.

LI

Table 6.0

Weekly average temperature and relative humidity
in some zones.

LII to LVII

Tables

/ Annexures /

Annexure 1.00

Standard weeks used.

LVIII

Annexure 2.00

.. VI ...

Annexure 2.00

Zone I. Residual Soil-Maize zone.
Area under crops in talukas and
percentage net sown area there of.

LIX & LX

Annexure 2.01

Zone II. Residual Soil-Cotton zone.
Area under crops in talukas and
percentage net sown area there of.

LXI

Annexure 2.02

Zone III. Residual Soil-Paddy zone.
Area under crops in talukas and
percentage net sown area there of.

LXII

Annexure 2.03

Zone IV. Deep black Soil-Cotton zone.
Area under crops in talukas and
percentage net sown area there of.

LXIII & LXIV

Annexure 2.04

Zone V. Sandy Loam Soil-Bajri-Tobacco zone.
Area under crops in talukas and
percentage net sown area there of.

LXV & LXVI

Annexure 2.05

Zone VI. Loamy Sand Soil-Bajri-Cotton zone.
Area under crops in talukas and
percentage net sown area there of.

LXVII & LXVIII

Annexure 2.06

Zone VII. Sandy Soil-Bajri-Pulses zone.
Area under crops in talukas and
percentage net sown area there of.

LXIX & LXX

Annexure 2.07

Zone VIII. Clay Alluvial Soil-Cotton/Dry Wheat zone. LXXI & LXXII
Area under crops in talukas and
percentage net sown area there of.

Annexure 2.08

Zone IX. Residual Soil-Groundnut zone.
Area under crops in talukas and
percentage net sown area there of.

LXXIII to LXXVI

Annexure 2.09

Zone X. Littoral Cotton/Dry Wheat zone.
Area under crops in talukas and
percentage net sown area there of.

LXXVII

Annexure 2.10

Zone XI. Littoral Paddy-Wal zone.
Area under crops in talukas and
percentage net sown area there of.

LXXVIII

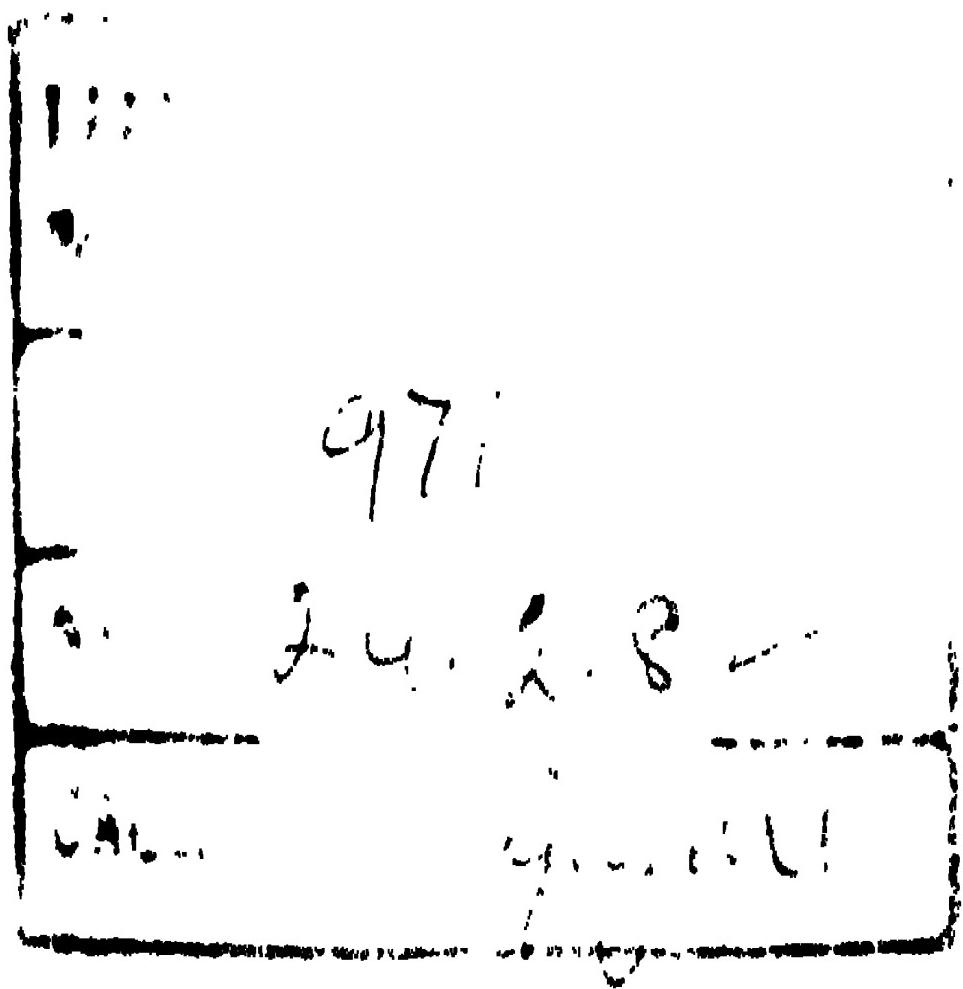
Annexure 2.11

Zone XII. Littoral Groundnut-Bajri zone
 Area under crops in talukas and
 percentage net sown area thereof.

LXXIX & LXXX

LIST OF ABBREVIATIONS.

B.K.	..	Banaskantha
C.V.	..	Coefficient of Variation
Dec/Decr	..	December
e	..	east
e-w	..	east to west
Feb.	..	February
G	..	Gujarat
GSA	..	Gross Cropped Area
GSA	..	Gross Sown Area
Jan/Janu	..	January
KM	..	Kilometer
Maxi. temp.	..	Maximum Temperature
Mini. temp	,..	Minimum Temperature
N/n	..	north
Nov./Novr.	..	November
NSA	..	Net Sown Area
Octo/Octr	..	October
P.C. of R.H	..	Percentage of relative humidity.
F.C. of S & H & Temp.in C.	..	Percentage of sowing and harvesting and temperature in centigrade
P.M./Pmls.	..	Panchmahals (P M)
R.F. in m.m.	..	Rainfall in millimeter
S	..	South
Septr.	..	September
Srt.	..	Surat
w	..	West.



Errata

Page	Para NO.	Line	Printed	Read
6	2	3	4	5
1	1	3	Kutch having	Kutch, having
1	1	7	Some times,	Some times
1	1	8	part of the	part, the
1	1	9	districts	seven districts
1	1	11	region.)	region.
1	1	15	Bombay State, constitute	Bombay State now constitute
1	3	3	bay	gulf
2	1	5	PM	Panchmahals
2	1	5	Bharooch	Bharuch
2	2	3	months and	months, and
2	2	9	(Table-1).	(Table-1 b).
2	2	21	spells when	spells, when
2	2	26	problem	problems
3	1	14	purposes. Possibility	purposes, possibility
3	1	20	renewed	reviewed
3	2	5	it	its
5	5	7	percentage	percentages
5	5	8	criterion	criteria
5	5	9	period	periods.
5	5	20	staggered	staggered
6	1	6	are of irrigated	are irrigated.
6	1	9	conditions at	conditions pre- vailing at
6	4	5	second picking	last picking
6	4	8	table 4.2A,	table 1.of and 4.2A,
6	4	10	second	last
7	1	5	(Table 1.0)	(Table 1.of)
10	1	4	has	is
10	4	12	GSA	NSA
11	2	19	bay	gulf
11	3	2	situated with	situated, with
11	3	4	Bharooch	Bharuch

/ 2 /

1	2	3	4	5
12	3	1	has	have
12	3	3	Bharooch	Bharuch
13	6	1	is *	are
14	3	1	Condition	Conditions
14	3	1	extents	extents
14	3	12	zone II	zone X
14	4	4	of	or
15	2	9	khakharii	Khakharia
15	3	3	residual	residual
16	2	3	bay	gulf
16	6	2	bay	gulf
17	2	1	bay	gulf
17	3	18	and	wheat and
19	5	1	bay	gulf
19	5	2	bay	gulf
19	5	3	Bharooch	Bharuch
20	1	2	bay	gulf
20	1	3	bay	gulf
20	4	5	Bharooch-Amod	Bharuch-Amod
20	5	4	Bharooch	Bharuch
21	2	4	are	arc
21	2	4	correlations	conditions
24	1	3	possible	possibly
24	1	9	growing	max. grown
			Littoral	Littoral
Maps	-			Map 1 page I

Map 3 page III zone- VII :

Different signs are given on the map showing zone VII; both the parts are to be covered under one type of sign; treating it as one single zone.

Graphs.

A.1 IV to IX pages P.C of P.H
 to
 A.6

P.C. of R.H.

Crop zones of Gujarat

By

Gunvant A. Patel, G. B. Kasad & R. L. Shah **

Gujarat state is divided into nineteen districts, and 164 talukas. They vary greatly in size. The largest is the Kutch district, with the Rann of Kutch having 23 % of the state's total geographical area. At the other extreme, the Dangs district, is less than a percent of the state's area. The state's capital is located in Gandhinagar district, which was carved out from the districts of Mehsana, Sabarkantha and Ahmedabad. Some times, the state is considered to have two administrative divisions, the western part of the peninsular region and Kutch with 11 districts and the eastern region with eleven districts.

The Meteorology Department, Government of India refers to eastern region as the Gujarat region and the western as Saurashtra and Kutch region.) Most parts of the peninsula excluding parts of Amreli district was the state of Saurashtra; likewise Kutch was also a separate state until 1960, when, these along with the eastern part, and the Amreli district formerly of the old Bombay state, constitute Gujarat state.

Geographically, Gujarat is far away from real tropics. The southern border is at 20° 40' N latitude and the northern border 24° 55' degree N, is even beyond the tropic of cancer. The latter passes through the districts of Kutch, northern tips of Surendranagar and Ahmedabad and through the districts of Mehsana and Sabarkantha. In many parts of the world, great deserts are located on this latitude. So also in Gujarat, the great rann of Kutch, and parts of Banaskantha in north have conditions akin to desert. The rann which is about 300 kms e-w, and half that wide, has its northern boundary along the Indo-Pakistan frontier merging in the desert of Thar in Pakistan.

The Saurashtra and Kutch region is connected with the large fertile alluvial plain of the main land Gujarat, by a narrow flat belt, extending from the bay of Cambay to the little rann of Kutch. This large alluvial plain extends from B.K. in north to Valsad in south. On the east of the great plain, starting from the northern border of the state in B.K., is the hilly stretch along the entire eastern border of the state. The main mountain ranges in this belt are the Arasur of Arvalli system, the Vindhya and the Sahyadri at the southern end. The altitude of Arvallis in Banaskantha district at a few places is little over 900 m. In the taluka of Dhanera of the same district, and further north wards, adjoining Rajasthan territory, these mountains appear as straggling hills, forming

**

Gunvant A. Patel, Director of Agriculture
G. B. Kasad, Dy. Director of Agriculture (TRS)
R. L. Shah, Dy. Director of Agriculture (Stat.)

rugged country with hardly an altitude of 100 meters. In this area the elevation being low, the Arvalli system does not offer sufficient obstruction to south west monsoon for inducing precipitation, thus making the area drought prone. An elevation of 300-900 meters is met with in eastern PM and in a small eastern parts of Bharooch district. In the Sahyadris in Dangs district, elevation of 1000 meters is met with. Saputara, the state's only hill station is at an elevation of 875 meters. (Physical feature Map).

Rainfall

The state is under the influence of s-w monsoon and is at its peripheral boundary. The monsoon season is of very short duration, about three months and in rest of the year, there is no precipitation. Only rarely, some precipitation occurs in the remaining part of the year. Monsoon commences usually by the middle of June and withdraws by the end of September. The precipitation in the first half of June and the latter half of September, is very little compared to the intervening period. The state's annual average rainfall is 820 mm (Table-1). July and August are considered the rainiest months. The peak, is usually reached in the last week of July (Graph-A1). The rainfall chart, as shown in the graph, indicates that there is increasing rainfall in successive weeks, except a slight depression in 29th week (Graph-A1) and 34th week (Graph-A1). The chart has been framed by working out the average rainfall in various weeks of all the reporting stations. This distribution chart, however, is not a real representation of the happenings in a year. The rainfall usually accompanies cyclonic storms which are not continuous during the season. Generally there are 2-4 such spells of rainy periods and the intervening period is usually rainless. In particular, this happens after the start of the monsoon in June, which facilitates sowing operations thereafter. In between two rainy spells when the crop is growing, the farmers are able to interculture the fields for removal of weeds. In regions where such rainless spell are not long, weed growth becomes a problem, as is the case in s. Gujarat. From the point of view of agriculture, the weekly average rainfall chart is not helpful in understanding the problem related to agriculture. In future, it would be of interest to prepare rainfall charts related to the rainy and the rainless spells during the monsoon season.

As in case of total annual rainfall, the variability of the mean annual rainfall also varies from zone to zone.

Classification of soils

Soil survey of the state has not been completed as yet, though a beginning has been made. In defining the crop zone, this information if it was available, would have been of immense value. However, a soil survey of this type requires quite a ^{long} time to complete and

therefore it was not felt desirable to postpone this publication on crop zones of the state. The textural classification of the soil is undertaken in many scattered places in the state for many different purposes. Some of these have been for classifying soils for their irrigability, others have been analysed for determining its use for cultivation. Soil survey has, however, been completed only for Surat and Valsad districts. An attempt has been made to use the available textural classification of soil from all over Gujarat obtained from different sources. Even then, it was found that some of the talukas were entirely left out and no textural classification was available for even a few samples. An attempt was, therefore, made to collect the samples and determine the textural classes to which soil of the talukas belong. In view of the secondary use of these soil samples which were collected and analysed for some other purposes. Possibility of soil samples in some of the talukas not possessing all the attributes for representativeness cannot be ruled out. Even when the samples had these limitations, the analytical results now available help us in classifying the soils of the talukas and distinguishing them from each other. The descriptions which have been offered here for various crop zones, however, will have to be renewed when the detail soil survey is completed and lines re-drawn, where necessary.

The nature of formation of soil is in most cases easy to determine. It has, therefore, been used as the principal distinguishing characteristic. Two broad soil formation types have been noted - one is the residual type and the other alluvial type. The eastern hilly belt of the state has most of its area with residual type of soil. In undulating regions like this, however, the local alluvial deposits are present along the banks of rivulets. The predominant type of soil is, however, residual type.

The variability of soil types from one part of the state to another is thus large. In regard to its relationship to crop pattern, it may be stated that atleast one characteristic i.e. a depth of the soil, has been important in determining whether a successful cotton crop can be grown under rainfed conditions. Cotton has been used as an important indicative crop in determining the zones in the state. Traditionally cotton has been grown in the black cotton soil and the residual soil of medium depth or deep. It has not been successfully cultivated in the sandy loam or the loamy sand zones, which has limited the expansion of the area under the crop in these zones. On the other hand, the sandy loam soil has been identified as best area for tobacco cultivation. In demarcating the zones, therefore, such basis correlations of soil and crop has been kept in view.

Temperature and relative humidity

Weekly maximum and minimum temperatures along with the average relative humidity have been obtained for the available stations in various zones. However, it has not been possible to obtain this information for all the zones and therefore information is reproduced (Table-6.) for those for which available. In the state, the average minimum temperature (12.5°C) is generally reached in about the 4th week of January, while the maximum temperature is reached approximately in the second week of May (19th week). The average maximum temperature is 39.8°C .

The minimum relative humidity is reached in the 1st week of February (6th week). While the minimum relative humidity is 62.6 %, the maximum is 89.8 %, which is reached in the first week of August (31st week). In the latter two weeks of July also, relative humidity remains high (88-89 %) and continues to be so upto the last week of August (35th week). In other words, the latter two weeks of July and the whole month of August is the period of highest humidity in the state.

Crop seasons

Three crop seasons are recognised in the state - (1) the kharif crops, which are sown in the monsoon season, (2) rabi, the winter crops which are sown after the monsoon recedes and the winter begins, and (3) the summer crop, generally sown in about January-February. The extent proportion is 4 : 1 : 1 if or so.

The extent kharif crops fall in two main groups - those with short period of maturity (about 4 months and less) and the long duration ones (maturity period of 6 to 8 months). In the first group (Group-A) in all areas, except jowar; the maturity period of jowar varieties is both short and long duration. The early ones are the fodder types, and those with longer maturity periods are grain types. Due to paucity of data, it has been for the time being put under short duration kharif, though further study will help to create a more accurate picture. All pulse crops except tur (*Amar* *Gajanus*) are of short duration. Amongst crops other than foodgrains, groundnut is a major short duration kharif crop. The long duration crops (Group B) besides tur, are the two important commercial crops of cotton and tobacco. Proportion of these crops in locality really gives it a distinctive characteristic. The predominance of the area under groups A & B enables differentiation of certain crop zones in Gujarat. The extent of individual cereal crops like maize, pearl millet, bajra and hill millets within the group of short duration kharif crops also helps us to identify crop zones.

The extent of rabi crops (Group C) is indicative of availability of soil moisture after harvest of kharif or as in most parts of Gujarat, the available irrigation resources, as many of these are grown under irrigation. Wheat to some extent is grown as an unirrigated crop, but

its major area is irrigated. The other rabi crops are gram and Dolichos which generally grow on residual moisture and are not usually irrigated.

In a rainfall distribution pattern confined to a few months in monsoon, growth of perennial crops without irrigation is dependent on soil depth and moisture retentiveness. Commercial plantations of fruit trees are thus confined to regions with deep retentive soil with high rainfall. Fruit trees, sugarcane and banana, are also successfully grown when perennial irrigation is available. These and others are all in Group D.

The major crops grown in Gujarat thus fall into the four groups, namely (A) short duration kharif, (B) long duration kharif, (C) rabi crops and (D) others including perennial crops. Their relative extent has been used here to delineate crop-zones.

Sowing period

Assessment has been made of the sowing and harvesting periods of major crops. These are - bajra, groundnut, cotton, maize, which are kharif crops and wheat which is a rabi crop. Though the information on sowing time of paddy is available, as the crop is either sown or drilled, separate data could not be collected and therefore, data in regard to sowing and transplanted crop has not been presented. However, harvesting time of paddy has been tabulated (Table 4.4).

Thousands of crop cutting experiments are being conducted in the state for assessment of yield. Ancillary information of these plots such as sowing, harvesting time, fertilizer application etc. is being compiled since long. It was, however, considered adequate to compile the average time of sowing and harvesting for triennium ending 1971-72 figure, which is presented in table from 4.0 to 4.5A for sowing and harvesting. Percentage of sample fields sown & harvested and falling in different weeks have been used as a criterion for sowing and harvesting period. The conditions for sowing are not reached uniformly at the same time everywhere, and the period extends for nearly a month and more for each crop. Sowing generally begins in the second week of June (23rd week of the year) and is more or less completed by the first week of July for the crops of groundnut and bajra. A smaller proportion of fields are sown thereafter. Sowing of maize crop, which is concentrated only in one zone, generally commences about the same time as groundnut and bajra, but gets completed by the first week of July (27th week); relatively small percentage of fields remain to be sown thereafter. It is observed that in case of groundnut, the sowing is completed little earlier than bajra. The sowing of cotton appears to be more staggered than is case for groundnut, bajra or maize, though peak sowing period of cotton is about the same as these crops.

Unlike the sowing period of rainfed crops, the sowing time of irrigated wheat as well as unirrigated wheat is more accurately defined. This is so because, soil management in post monsoon period is easier, and in case of irrigated wheat, the day of sowing can be suitably adjusted. The two types of wheat grown in the state are durum (unirrigated), and aestivum types which are of irrigated. The durum wheat is grown principally after kharif fallow. As moisture is a limiting factor, the farmers try to sow the crop as early as possible even though it is warmer than the conditions at the normal wheat sowing time. Consequently, the sowing time of such wheat is usually earlier.

The sowing of wheat is concentrated in the 3rd week of November, with a peak in mid-November, which is the recommended sowing time for aestivum wheat. In parts, sowing of aestivum wheat is later than this period as in zone IV. (Graph B.04).

Harvesting period

Out of the kharif crops, the harvesting period of maize is more sharply defined than other kharif crops; it begins usually in the first week of September^(36th week of the year) and most of it is completed by the second week of October (41st week of the year). The bajra crop generally begins to be harvested about the same time as maize crop, though the harvest period is more staggered. Comparing the weeks when largest proportion of fields are harvested, it is seen that bajra is harvested little later than maize. The peak of harvesting of groundnut is some what later than that of bajra and most of it is concentrated between the second week of October to the second week of November. Separate data for the two types of groundnut, the erect variety, which is of shorter maturity period and the spreading variety which has longer duration, are not available. Further attempt to redefine sowing periods for the area growing these two varieties separately, is required for a better understanding of the actual time of harvesting. The harvest of paddy is concentrated in the month of October, and small proportion of crop is harvested prior and later to it.

Cotton is a kharif crop with long maturity period, extending anything from 6-9 months. There are large number of pickings of cotton and if all the data are compiled, it may not lead to an accurate analysis. Consequently, the percentage of crop from which the first and the second picking in each of the week has been ascertained and recorded. As would be seen from the table 4.2A, the first picking begins by about October and continues as late as in March. Such wide variation is because of varietal differences and due to the climate. The second picking usually begins about a month later and ends later by a similar period. Looking to the spread of the frequency distribution of the percentage fields harvested in different weeks, it is concluded that varietywise and zonewise information should be compiled in order to define precisely the harvesting period of cotton.

The harvest period of wheat, like its sowing time is distinctly definable. More than 50 % of the crop is harvested in the month of March and little of the harvest is in April. Some part of the crop, particularly durum wheat is harvested earlier and the arrival of this wheat in the market is also earlier than aestivum types (Table 1.0).

Basis of crop zones

A taluka and a district are the administrative units, and consequently for agricultural development plans use is made of such units. Unfortunately, this concept also prevails in applied agricultural research, and results of adaptive trials are compiled on the basis of districts. The production estimates of crops are also planned with district as a unit. As Gujarat state has considerable variability, of rainfall, soil & crops, it was considered desirable to demarcate zones of homogeneity in regard to crop pattern. Such zones would then be used for many purposes.

The crop area statistics are available for each taluka, and though they are compiled on the basis of village-wise statistics, the latter are not yet available in a manner as can be used for delimiting crop zones. Taluka has, therefore, been used as the smallest unit for delineation. Selection of crops in traditional agriculture, has been by a process of trials and errors over many decades. Most of the crops grown now are so closely suited to the prevailing climate, and water resources, that a change is not usually immediate. Though process of introduction of new crops continues, greatest diversity is achieved where irrigation is available, and changes in crop pattern are also immediate. In Gujarat which has about 10-13 % crop area irrigated, such possibility is therefore limited for the state as a whole. Centres of such development are, however, observed when an irrigation system has been constructed.

In the delineation of crop zones, the greatest constraint has been the absence of a soil survey, and studies on crop-weather studies. A ~~large~~ lot of studies both in spread and depth is called for. However, as certain types of crops, and soil types are known to be characteristic of specific regions of the state, it was considered advantageous to demarcate zones having some degree of homogeneity in extent of crops grown. Map 3 shows the demarcation of twelve zones so constituted. The nomenclature of the zones adapted here is related to types of soil and the distinctive crop(s). In a few zones, though area under a crop may not be the largest, still the crop if it is observed to give an identity to the area, it is used to provide a proper name for the zone.

Crop Zones

The following crop zones are proposed, and the talukas included in each are also indicated therein :

Zone I : Residual soil - Maize zone

District	Talukas covered (Total No. 18)
Banaskantha	Danta
Sabarkantha	Khedbrahma, Idar, Vijaynagar, Bhiloda, Modasa, Meghraj, Malpur, Bayad.
Kaira	Vadasinor.
Panchmahals	Lunawada, Santrampur, Snehra, Zalod, Godhra, D'baria, Limkheda, Dahod.

Zone II : Residual soil - Cotton zone

District	Talukas covered (Total No. 9)
Panchmahals	Halol, Jambughoda,
Vadodara	Jabugam, Chhota Udepur, Naswadi
Bharooch	Nandod, Dediapada, Sagbara
Surat	Nizar.

Zone III : Residual soil - Paddy zone

District	Talukas covered (Total No. 9)
Surat	Songadh, Uchhal, Vyara.
Dangs	Ahwa
Valsad	Chikhali, Vansda, Pardi, Dharampur, Umbargaon.

Zone IV : Deep black soil - Cotton zone

District	Talukas covered (Total No. 18)
Bharooch	Amod, Bharooch, Ankleshwar, Waghodia, Jhagadia, Valia
Vadodara	Karjan, Dabhoi, Sankheda, Sinor, Tilakwada
Surat	Mangrol, Kamrej, Mandvi, Bardoli, Palsana, Valod, Mahuwa.

Zone V : Sandy loam soil - Bajra-Tobacco zone

District	Talukas covered (Total No. 14)
Ahmedabad	Ahmedabad (city), Daskroi.
Kheda	Mehmedabad, Kapadvanj, Nadiad, Thasra, Matar, Petlad, Anand, Borsad.
Panchmahals	Kalol
Vadodara	Savli, Padra, Vadodara.

Zone VI : Loamy sand soil - Bajra-Cotton zone

District	Talukas covered (Total No. 9)
Mehsana	Chanasma, Visnagar, Mehsana, Vijapur, Kadi, Kalol.
Sabarkantha	Himatnagar, Prantij.
Ahmedabad	Dehgam.

Zone VII : Sandy soil - Bajra-Pulses zone

District	Talukas covered (Total No. 23)
Kutch	Lakhpat, Abdasa, Nakhatrana, Mandvi, Bhuj, Mundra, Anjar, Bhachau, Rapar.
Banaskantha	Wav, Tharad, Dhanera, Deodar, Santhalpur, Radhanpur, Kankrej, Deesa, Palanpur, Vadgam.
Mehsana	Harij, Patan, Siddhpur, Kheralu.

Zone VIII : Clay alluvial soil - Cotton/Dry wheat zone

District Talukas covered (Total No. 12)

Mehsana Sami

Ahmedabad Virangam, Sanand, Dholka, Dhandhuka

Kheda Khambhat

Surendranagar Dasada, Halvad, Dhrangadhra, Lakhtar, Limbdi.

Rajkot Malia.

Zone IX : Residual soil - Groundnut - zone

District Talukas covered (Total No. 50)

Amreli Amreli, Babra, Lathi, Lilia, Dhari, Khambha, Kunkavav.

Bhavnagar Gariadhar, Gadhada, Umrala, Shihor, Palitana, Kundla, Botad, Vallabhipur, Bhavnagar, Ghogha.

Jamnagar Jamnagar, Khamhalia, Bhanwad, Lalpur, Jam Jodhpur, Kalawad, Jodia, Dhrol

Junagadh Junagadh, Visavadar, Kutiana, Manavadar, Vanthali, Bhesan, Keshod, Mendarada, Talala.

Rajkot Rajkot, Upleta, Paddhari, Lodhika, Morvi, Kotda-Sangani, Wankaner, Jasdan, Jamkandorana, Gondal, Dhoraji, Jetpur.

Surendranagar Chotila, Muli, Wadhavan, Sayala.

Zone X : Littoral - Cotton/~~Irrigated~~ Dry wheat zone

District Talukas covered (Total No. 4)

Bharooch Jambusar, Vagra, Hansot

Surat Olpad

Zone XI : Littoral - Paddy-Wal zone

District Talukas covered (Total No. 4)

Surat Choryasi

Valsad Navsari, Gandevi, Valsad.

Zone XII : Littoral - Groundnut-Bajra zone

District Talukas covered (Total No. 13)

Jamnagar Okha Mandal, Kalyanpur.

Junagadh Porbandar, Ranawav, Mangrol, Malia, Patan-Veraval, Una.

Amreli Kodinar, Jafrabad, Rajula.

Bhavnagar Mahuwa, Talaja.

The characteristics of each zone are described below and the differences in, rainfall, soil type and sowing and harvesting periods of major crops follow. (Map-3).

Zone I : Residual soil - Maize zone

It extends along the Arvalli hills in the n-e part of the state. The talukas from Danta of Banaskantha district, the north-eastern talukas of Sabarkantha and upto the southern talukas of Dohad and Devgadh Baria talukas of Panchmahals are included in this zone. The terrain is undulating with hills of low altitude. The soil type on the hill slopes is mainly formed in situ and brought under cultivation in recent times after deforestation. In the valleys, local alluvial deposits are of medium depth; they are fertile and have been brought under cultivation in even more recent times. These are called 'Kampas' - the word is derived from camps or settlements established for reclamation of forest lands.

The zone has 82 % of its NSA under short duration kharif crops. Such high proportion of net sown area under short duration kharif crops is observed only in few other zones of Gujarat. The cropping pattern has maize-paddy-hajra-groundnut as short duration crops, out of which maize is the dominant one, and has been used to name the zone (Table 5.01 -Annexure 2.00). Long duration kharif crops occupy about 17 % of the GSA (gross sown area). In certain talukas where local deep soils are found about 30 % is under such crops, mainly cotton. In some talukas of Sabarkantha district viz. Khedbrahma, Idar & Bayad, and in Balasinor of Kheda district, a relatively larger proportion of area is thus under cotton. Its cultivation is concentrated in the Kampas of these talukas. These cotton areas form fairly distinct pockets in the talukas. They are distinct not only with reference to the crop, soil type and productivity, but also because they are predominantly cultivated by Patidars; unlike the rest of the zone where Adivasis, constitute the principal group.

The Balasinor taluka of the north-eastern part of Kheda district has been included in this zone, as it has conditions similar to the adjoining talukas of Bayad of Sabarkantha and Lunawada of Panchmahals district. Like some of the talukas of Sabarkantha district, which have fairly large area under cotton, this taluka also has comparatively larger area under cotton, and less under maize.

About 11 % of the NSA has a second crop in rabi, mainly unirrigated wheat and gram. This creates a relatively high intensity of cropping (111 %) even though the percentage area irrigated is 8.7 %. The irrigation water is principally from wells and remains available upto the beginning of winter and dries off thereafter. The rocky areas of granites, phyllites schists and trap form poor aquifers and ground water is confined to cracks and fissures; this limits their water bearing potential. The characteristics undulating topography results in faster surface run off.

Zone II : Residual soil - Cotton zone

Along the hilly tract of eastern part of the state, south of zone I is this zone, which includes Halol of Panchmahals and a few eastern talukas of Vadodra and Bharooch districts and Nizar taluka of Surat district at its southern end. Soils are mainly residual. In this zone, due to higher rainfall, and less return, maize is cultivated to a lesser extent than zone I. The crop pattern is cotton-jowar-paddy-groundnut. Cotton is dominant (27 %) and is more than the average of zone I, but is similar to some of the cotton growing talukas of that zone in Sabarkantha district (Table 5.02 Appendix 2.01). The predominance of long duration kharif crop results in a lesser proportion of area under rabi crops. Only 2.5 % of the GSA is under crops like rabi wheat, gram etc., unlike about 11 % in zone I. Lesser proportion of rabi crops also results in a lower intensity of cropping (102 %) which is much less than zone I. The area irrigated is 5.7 % of NSA.

Zone III : Residual soil - Paddy zone

This zone lies in s-e part of the state and includes Dangs district, Songadh, Vyara, Uchhal of Surat and Chikhli, Vansada, Pardi, Dharmpur, ~~Mitki~~ and Umbargaon of Valsad districts. Their location is in the northern most end of the Sanyadri mountains. In this zone due to greater precipitation, the cropping pattern is paddy-hill millets-jowar. The largest proportion of area of 26 % is under paddy and crops like maize & bajra are not grown. The hill millets are included under "Others" short duration kharif, which are grown in about 23 % of NSA. A short duration kharif crop of groundnut is grown in well drained soils of less clay content. Cotton is cultivated only in about 5 % of the area. The second crop following paddy is usually val (Dolichos) (4 %). The total area under rabi crops is about 8.3 % of the NSA, which is less than zone I but more than zone II. One of the important characteristics of this zone is a larger proportion of the cultivated area under crops of group D. These crops are in 27 % of NSA, which is much more than the state as a whole. A further analysis of the cropping pattern of the talukas of Chikhli, Vansda, Dharmpur, Pardi and Umargaon, also show the presence of large area under pastures grouped under "others". These grass lands are important source of fodder in demand in the city of Bombay as well as the district of Surat, both of which have a developing dairying industry. In years of drought, this is also an important source of hay for the rest of the state (Table 5.03 - Annexure 2.02). The area irrigated is 4.4 %, which is quite small, and the cropping intensity is 106 %.

Large alluvial plain

The plain to the west of eastern residual soil zones, extends all the way from north of the state to south. This long and broad belt has alluvial soil through out, differing in fertility, texture and colour. Rainfall and crop patterns also vary greatly. The state is more commonly known by the characteristics prevailing in this area, rather than the eastern hilly area or the peninsula to the west. It is divisible into several zones. The southern most is the deep black soil cotton zone IV, sandy loam, bajri-tobacco zone V, loamy sand bajra-cotton zone VI, and the sandy bajra-pulse zone VII. On the west of zone IV are two littoral zones along the bay of Cambay.

Zone IV : Deep black soil - Cotton zone

On the west of residual soil zones II and III, this zone is situated with deep black alluvial soil. It extends in a few talukas of Vadodra district, the greater part of Surat district, parts of Bharooh district. The kharif cropping pattern is cotton-jowar-paddy and has nearly 50 % of the area under long duration crops like cotton, and only 35 % of the area under short duration kharif crops like paddy. The latter is frequently sown as mixed crop with cotton. Jowar, which is grown to an extent of 18 % though shown as short duration kharif crop

is really a long duration kharif crop in this zone. Including jowar, the long duration crops thus occupy about 60 % of the NSA, which is its distinctive characteristic. The predominance of the long duration kharif crops results in a smaller proportion of area under rabi crops. They occupy only 5.4 %, of which val (Dolichos) and wheat are the two important rabi crops. They are sown after paddy harvest. Another distinctive feature of this zone is a large proportion (13.5 %) of the area under "other crops" (Group D), which includes many perennials like banana, sugarcane, etc. The diversity of the cropping pattern is principally due to the high rainfall, retentive soils and high proportion of irrigated area (15.8 % NSA). A large part of the zone is under the command of Ukai-Kakrapar irrigation system. When water is fully utilized, the cropping pattern is likely to undergo further changes. At present, the cropping intensity is 104 %, which is also likely to increase.

The zone has three distinct tracts with varying degree of dominance of cotton. The larger proportion of cotton is accompanied by a smaller proportion of jowar and paddy and vice-versa. Its southern part (Kamrej, Mandvi, Palsana, Bardoli and Valod and Mahuwa talukas of Surat district) has 24 % of the area under long duration kharif, 21 % of the area under jowar, and excluding jowar, 28 % of the area under short duration kharif. About 10 % of the area is under rabi, giving a cropping intensity of 110 %, which is higher than the remaining part of the zone. This tract has also the largest proportion of perennial and other crops (26 %).

The northern most talukas of the zone has larger proportion of area under long duration kharif, principally cotton. An area including Amod, Karjan, Bharooch talukas of this zone commonly known as Kanam Pradeh is one of the most fertile tracts in the state and is well known for the quality of cotton produced there. This zone has also a larger proportion of area under long duration kharif principally cotton, the area of which varies from 50 to 75 % of NSA (Table 5.04 - Annexure 2.03).

The talukas of Dabhoi, Sankheda, Shinor, Waghodia, Tilakwada, Ankleshwar, Jhaghadia and Valia though have large area under long duration kharif as in Kanam Prades, is not considered a part thereof. Parts of these talukas have slightly different feature, and have effect of the conditions similar to the adjoining residual cotton zone.

Zone V : Sandy loam-Bajra-tobacco zone

North of deep black soil cotton zone IV and west of the residual soil cotton zone II, is the sandy loam zone V. Its chief characteristics are the loamy alluvial soil of great depth with extremely good rainage and generally of flat topography, except on banks of rivers where deep ravines are common. It is drained by a large number of small and large rivers. ^{Mesavo} Mahor, Luni, Shedhi and Vatrak, are the tributaries of Sabarmati.

River Mahi divides Vadodra and Kheda districts, parts of both these are in this zone (Map-1).

Tobacco crop, whose quality is greatly influenced by soil and irrigation water is extensively grown in this zone, and can be considered its typical crop. Likewise, bajra and paddy are also cultivated extensively (Table-5.05 Annexure-2.04).

The sub soil water resource is one of the best in the state, and is extensively exploited. Privately owned dug cum bore wells are common. Distribution is often through underground cement pipes; its tall air-vents above ground at intervals stand out as visible land marks in Kheda district and across the Mahi river in adjoining Vadodra, Padra and Savli talukas.

The core of this zone is the familiar Charotar tract of Kheda district. Most of the reference to this tract in the past, consider Anand, Petlad, Borsad and Nadiad talukas of Kheda district as of this tract. Tobacco crop is more important here than in the remaining part of the zone. The Charotar tract is drained in Sabarmati by Mahor, merging in Luni, then flowing as Shedhi and Vatrak; the latter being an important tributary of Sabarmati. On the s-e of Anand taluka is Mahi river which flows on the boundary of Borsad taluka. Alongwith Sabarmati it flows in the gulf of Cambay. Their delta known as Bhal is much different from Charotar tract.

The riverain tract of Charotar has alluvial soils of great depth and are well drained due to the large number of rivers flowing across it. There is abundance of deep and shallow aquifers which have been tapped and has resulted in high intensity of tube wells and surface open wells; 38 % of NSA of these four talukas is irrigated. The average area double cropped which is 12 % is one of the highest in the state, and is comparable to parts of Mehsana with similar irrigation facilities and extent of double cropping. A further increase is to take place when Mahi/Kadana project, under whose command this tract is located, is commissioned. The productivity of soil is good, which has given the name of tract (Charu (G) - gold, Ter (G) layer).

Characteristics similar to Charotar tract is observed in adjoining Mehmabad and parts of Matar and Cambay talukas of Kheda district, but tobacco is not as important here as in the adjoining talukas. Cambay has not been included here as its major part shares the characteristics of clayey alluvial zone VIII whose part it is considered; the chief difference is its inadequate drainage. The talukas of Ahmedabad city and Dascroi, being on the bank of the river, have alluvial soil, of similar characteristics as the rest of this zone.

Talukas of Thasra and Kapadvanj of Kheda district have been grouped under this zone. The soil type of Thasra is essentially similar to the rest of the zone. Likewise, though to a smaller extent, soil type of Kapadvanj is similar. Tobacco is an important crop in Thasra, but not in Kapadvanj. In both these talukas, cotton is more important than in Charotar tract. The portions of Thasra and Kapadvanj which are dissimilar

from the zone, are in northern Thasra, southern Kapadvanj, and also in eastern Nadiad taluka. These portions of Thasra, Kapadvanj and Nadiad, alongwith small western part of Balasinor taluka are together sometimes referred to as Mal pradesh. Its distinctive feature is black soil suitable for cotton and maize, whose area is significant. It has been brought under cultivation after large scale removal of forest growth relatively recently. Major portion of Balasinor talukas of Kheda district is hilly and is appropriately grouped under residual soil maize zone, rather than the sandy loam soilzone V. These characteristics of adjoining residual soil zone are evident here, and more detailed survey may require fresh deliniation.

On the left bank of Mahi river, talukas of Padra, Vadodra and Savli have similar soil type. Parts of Vadodra taluka (55 villages) and most of Padra taluka said to belong to Wankel tract are included in this zone. It is about 15 miles n-s and 45 miles e-w. Soils are lighter and sandy and tobacco is grown, but other crops are preferred. These talukas though considered a part of this zone, have developed diverse cropping pattern, under the influence of available irrigation facilities from deep aquifers and easy access to the urban markets. Area under fodder jowar and vegetables is more than in the rest of the zone.

Condition similar to Padra taluka of Baroda district extends further along the left bank of Mahi in western parts of Jambusar taluka of Bharooch. It is locally known as Haveli tappa. The prosperity of Haveli tappa is better than Bara vibhag to its west. The relatively large number of rural well built houses - an index of prosperity, (Haveli G-mansion) has been the reason for it being known as 'Haveli' tappa. Its western boundary approximately lies along the river Dhadar dividing it from Amod taluka, and is a few kms west of Jambusar - Kavi railway tract; Jambusar itself has clearly similar conditions. Unlike the rest of zone, here, cotton crop is being grown, which however suffers from root-rot disease as is the case with this zone generally. To its west is the Bara vibhag, a part of the littoral zone II, where aquifers are extremely limited.

Zone VI : Loamy sand - Bajra-cotton zone

Like the sandy loam zone V, this zone lies on the sides of river Sabarmati and is situated north of zone V. The textural classification of soil has not yet been fully made. Consequently, the possibility of sub-dividing the area or even merging with adjoining zones for the time being hasnot been considered. Talukas of Chanasma, Mehsana, Vijapur, Vismagar, Kadi and Kalol of Mehsana district on the western side of river Sabarmati, and Himatnagar and Prantij of Sabarkantha district, and Deltgam of Ahmedabad district, are included in this zone. Separate compilation of crop pattern in the district of Gandhinagar, which lies on both sides of the river Sabarmati, has not been made, but it can be safely considered as a part of this zone.

The alluvial soil is very deep and like the sandy loam zone V, has many deep aquifers. They have been over exploited as a large number of tube

wells have been constructed both by farmers as well as government and there is over drawal, resulting in continuous lowering of the water table. As in case of zone V, tobacco is cultivated in a few of the talukas of this zone, but the extent area is relatively small and the variety grown in Vijapur is of the irrigated type. Bajra happens to be the main crop and the proportion of area under this crop is larger than zone V. Cotton is being cultivated in the parts of Kadi and Kalol talukas of a tract called 'Khakharif Tappa'. The extent of area under cotton in these two talukas is larger, as is also the case in Himatnagar taluka on the eastern side of the river Sabarmati. The significant cotton area in Himatnagar is indicative of conditions in parts thereof, being similar to the talukas of Idar and Bhiloda talukas of the residual soil - maize zone I (Table 5.06 - Annexure-2.05).

The extent of net irrigated area is one of the highest in the state. Vijapur taluka of this zone has 47 % of the area irrigated, which is the highest in the state. The crop pattern has been greatly influenced by the availability of irrigation water and lately with the possibility of growing hybrid cotton, the area thereunder has increased considerably in some of the talukas of this zone. The extent of double cropping is relatively high (16 %) and in some of the talukas irrigation extends to even 30 % of NSA. The scope of further increase of irrigated area is limited. In parts of Khakharif Tappa, which grows unirrigated cotton of the Vagad type, ground water resource is poor.

Prantij and Himatnagar of Sabarkantha and Dehgam of Ahmedabad have significantly more groundnut area which in the case of talukas of Sabarkantha district represent the characteristics of the residual soil - maize zone I, where this crop is also cultivated to some extent.

The border talukas of this zone are recognised with some difficulty but can be put together due to their location and some similarity of crop pattern. It is, however, possible to sub-divide it further and create more homogeneous groups of talukas. Certain crops like cumin, rape, mustard and isabgul though grown in small area are well known here.

Zone VII : Sandy soil - Bajra-pulse zone

The portion of n-Gujarat which is in the arid climatic zone is mostly included in this. The whole of Kutch district, most of Banaskantha and a few northern talukas of Mehsana district are considered as part of this zone. Bajra and pulses are the predominant crops, the latter are included in the category of 'others' under group(A' (Table 5.07 - Annexure-2.06). Fodder jowar is also an important crop. It is possible to sub-divide this zone into northern and southern half depending on the extent of area under cotton. In the southern talukas of Kutch viz. Mandvi, Mundra, Anjar, Bhachau and Rapar, significant area is under cotton. Likewise, Santalpur and Radhanpur of Banaskantha and Harij of Mehsana have cotton as an important crop. Amongst these, the southern talukas of Kutch viz. Mandvi and Mundra have better irrigation sources and some perennial crops are grown.

Conditions akin to zone VIII with clay alluvial soil and cotton-dry wheat crop pattern exist to some extent in the talukas of Radhanpur, Santalpur and Harij where unirrigated durum wheat is grown to some extent. However, in view of area under cotton being relatively less, it is not considered a part of zone VIII and has been retained in this zone VII. However, the possibility of sub-dividing the zone does exist.

Zone VIII : Clay alluvial soil - Cotton/Dry wheat zone

This central zone nearly divides the state in two major divisions, the eastern part, and the western peninsula. The zone is the land mass between the bay of Cambay in south and the bay of Kutch in n-w. In geological times, it was under water, but has got silted. Now it is just above sea level, and is generally flat. Area is prone to inundations, and soils are alluvial. Problems connected with soil inundation are faced in varying degree.

Talukas included in this zone are, Cambay (Kheda district), Dhandhuka, Dholka, Sanand and Viramgam (Ahmedabad), Sami (Mehsana), Dasada, Lakhtar and major parts of Limdi, Dhrangadhra and Halvad (Surendranagar), Malia (Rajkot) and a small part of Jodya (Jammagar). The latter taluka is, however, not included in this zone. Southern part of Dasorci has similar characteristics, but as it has less percentage of long duration kharif crops, it is put in the sandy loam zone, with similar soil type. Likewise, in parts of Mehdabad & Matar talukas of Kheda have characteristics of this tract, and village-wise survey will enable suitable deliniation, in the mean time, they are kept in the sandy loam zone V.

Its clayey to sandy clay loam soil is generally suitable for cotton cultivation. In the southern part, unirrigated wheat (durum) is the alternate crop to cotton (Table-5.08 - Annexure-2.07), but in its northern talukas, wheat as an alternate crop is not generally feasible due to moisture stress. Cotton variety grown in the zone belong to the closed boll Herbaceum Wagad type. The northern talukas have much larger proportion of NSA under cotton crop, than the southern part. Sorghum, mostly for fodder, is grown almost everywhere in this zone. The characteristic crop pattern in the large northern part is thus cotton/jowar. In the southern talukas, particularly in Bhal tract, wheat is an alternate crop to cotton. Paddy is also cultivated in the southern area in the low lands, but is not so in the northern talukas.

Sub soil water resource is poor and where tapped is usually saline and unfit for irrigation. Artesian tube wells exist in certain parts, but water is unfit for cultivation. Large salt works exist in its northern part. In its southern part near Cambay, there is a gas and oil field.

At its northern end, the central zone fans out in a narrow belt along the southern coast of bay of Kutch. Deep black alluvial soil deposits, is laid over red or yellow clay of marine origin, in a sharply defined layer. Such soil deposits are in the northern part of Dhrangadhra

and Halvad of Surendranagar district, and in Malia taluka of Rajkot district, and part of Jodiya in Jamnagar district constituting its western fringe. Soil depth may extend upto 2 meters in Malia taluka and adjoining small part of Morbi taluka. In the southern part of Morbi taluka is the beginning of another zone with soil formed in situ on trap rock of the peninsula.

In its extreme south, around the bay of Cambay is the Bhal and Daskoshi tracts. These tracts are known to the people since long areas with identifiable, topographical characteristics and crop pattern.

Bhal tract

Formed by silt deposition at the mouth of rivers Sabarmati, Bhogavo and Mahi, the tract is flat and only slightly above sea level. The plain is compared in flatness to that of human forehead from whose Gujarati equivalent the tract derives its name (Bhal (G) = forehead). Soil is black, clayey and deep with impervious sub-soil, preventing infiltration. Surface drainage is also impeded due to flat topography, inadequate drainage system, and inadequate outfall in the gulf. The tract gets water logged in monsoon, and sowing is dependent on recession of water. Cotton is the preferred crop, and sown if soil conditions permit, but it often gets destroyed due to water logging. As comparatively, it is a remunerative crop, farmers attempt frequent resowing if earlier ones are destroyed. The preferred variety is the closed ball herbaceum type as in the case in the rest of the zone VIII. If successful cotton crop is not ensured by August, the field is harrowed and prepared for sowing of wheat in winter season. Areas under cotton and wheat are negatively associated and fluctuate according to rainfall in July to September. Heavy rainfall hinders cotton cultivation and leads to larger area under wheat and vice-versa. (Patel & Shah 19). The tract is famous for the durum wheat cultivated on residual moisture, which fetches higher price than aestivum irrigated wheat grown elsewhere in Gujarat. A third important crop is sorghum for fodder. Ground water is brackish and tree growth is sparse.

53 villages out of 105 of Cambay taluka, 16 out of 82 of Matar taluka of Kheda district, are in typical Bhal tract. These talukas now fall under the command of Mahi/Kadana irrigation projects. The area near the gulf in Cambay are the flood plains, with heavy soils 1.2 to 1.5 meter deep undifferentiated laid by comparative coarser structure; this type of soil predominates in the Bhal tract.

Bhal tract extends northward from Cambay into Matar taluka and on the western bank of river Sabarmati in Dholka and Dhandhuka taluka of Ahmedabad district. 46 of the 117 villages of Dholka and 60 out of 142 villages of Dhandhuka taluka are reported to have typical characteristics of Bhal tract. Flood plain of river Bhogavo, in Surendranagar district, in Limbdi taluka known as Hadala Bhal has also similar characteristics. A part of

Vallabhipur (Bhavnagar district) also shares similar characteristics, though to a lesser degree.

Daskoshi tract

North of the Bhal tract in the central zone is the Daskoshi tract. This rice growing tract is commonly accepted to be on the eastern bank of river Sabarmati in Matar taluka and a small part of Mehdabad taluka of Kheda district and Daskroi taluka of Ahmedabad district. It is also flat, and well adapted for transplanted rice cultivation with the irrigation from diversion canals from Hathmati and Meahwo, the tributaries of Sabarmati. Productivity is high, but varies greatly according to availability of canal flow.

Transplanted rice is grown elsewhere in this zone, wherever local depressions provide adequate accumulation of water. Thus, significant area under rice exists in Sanand and Dholka taluka of Ahmedabad on the western bank of river Sabarmati. The extent of paddy cultivation in this zone, lessens towards west and north (Map-1 & 3).

The peninsula

The Saurashtra peninsula has sharply different agro-climatic conditions from the eastern plain of the state. A few of its eastern talukas share the characteristics of zone VIII. The north western tip i.e. Okha Mandal, Khamhalia and Kalyanpur are parts of the arid climatic zone which includes Kutch and western parts of Banaskantha. The central part of the peninsula has the soils suited for cultivation of groundnut, bajra and jowar. Most of this zone has groundnut as the dominant crop with less area under cotton which is indicative of the relative shallowness of soil prevalent in the zone. Depending upon the relative area under groundnut, bajra and cotton, there are three or four different but illdefined aspects.

The eastern talukas have relatively less area under groundnut with a corresponding increase in the area under cotton. This eastern part has deeper soils than the central part leading to a larger proportion of area under cotton than is generally the case in this zone. The somewhat larger portion of area under cotton in Jodiya, Morvi, Wankaner, Muli, Sayala and Vadhvan indicates its similarity with the zone VIII.

The talukas of Amreli, Lathi, Liliya, Gadhada, Jasdan, Botad, Shihor and Umrala have somewhat deeper soils in parts, which has enabled the cultivation of cotton to a greater extent than is the case in the central part of the peninsula.

On its south west corner, the talukas of Upleta, Dhoraji, Junagadh, Vanthali, Kutiyana, Manavadar also have a relatively larger area under cotton than is in the case in central part. These talukas are amongst the most prosperous farming areas of the peninsula.

Its north-western talukas of Jamnagar, Lajpur, Khamhalia, Bhrol, have also relatively less area under groundnut with a larger area under jowar, mostly of the fodder types. Cotton cultivation is almost insignificant in these talukas. This is due to the shallow soils and the influence of the adjoining arid zone.

This region can be said to have more than three cropping systems - (1) groundnut-bajra-jowar-little of cotton, (2) bajra-jowar-groundnut-cotton, (3) groundnut-jowar-bajra-very little of cotton, (4) cotton-bajra-groundnut. We have, however, for the time being only considered the peninsula in two zones - zone IX residual soil groundnut & its southern coastal zone XII (Map-1 & 3).

Zone IX + Residual soil - Groundnut zone

A large part of the peninsula is included in this zone. A few of the talukas in the n-e of Surendranagar district and those along the southern coast are distinguishable from the rest of the peninsula. The distinguishing crop in this zone is groundnut, and the other crops grown are bajra and cotton. In respect of the proportion of these crops, groups of talukas can be further differentiated. Talukas 1 to 12 (Table-5.09 - Annexure-2.03) can be said to have all the three crops of bajra, groundnut and cotton. The talukas of Bhavnagar district - Sr.No.13 to 18 - have relatively more bajra area and less of cotton. Vallabhipur taluka has diversified conditions prevailing in it. Part of it is like the Bhal tract of the central alluvial zone VIII, rest of it is similar to the rest of Bhavnagar district. The conditions similar to the central alluvial zone VIII enables growth of some significant proportion of cotton in this taluka. Talukas of Upleta and Dhoraji of Rajkot district (Sr.No.19 & 19) and the adjoining talukas of Junagadh district viz. Putiyana, Manavadar, Vantali and Junagadh have uniformly larger area under cotton as compared to the general conditions prevailing in the zone and also have very large area under groundnut.

This zone with residual soil, can be said to fall in 3-4 sub-groups - (1) n-e part, (2) s-e part and (3) southern part, and (4) the rest of the central part of the peninsula. However, as groundnut is the dominant crop generally in this area, all the talukas with such area has been retained in this zone. When its n-e, s & e boundaries are drawn on the basis of cropping pattern of villages, the size of the n-e talukas of central alluvial zone VIII and the southern talukas of Rajkot and n talukas of Junagadh may constitute an independent zone. For agricultural development work, however, this diversity will have to be kept in view all the time inspite of the fact that they have been kept in one zone.

Littoral zones

The coastal area on both sides of the bay of Cambay, have crop patterns which are different from the hinterland. The one on the east of the bay, includes parts of western taluka of Bharooh district, and southward the coastal

talukas of Surat and Valsad districts. The littoral zones of the eastern side of the bay are rather small and made up of a few talukas. On the west of bay is the beginning of the littoral zone of the peninsula. It is long lying along the arch of the peninsula and made up of many rainfall & crop patterns. It is considered the most fertile area of the peninsula, and is referred to as its green belt to distinguish it from the rest of the peninsula which has sparse tree growth.

Zone X : Littoral - Cotton/dry wheat zone

This coastal area is flat, the soil is black, alluvial, self mulching type, with yellow or gray marine earth at a few feet depth. Drainage is impeded. In earlier period, due to the difficulties of working the soil in monsoon, unirrigated rabi crops of wheat and lang (*Lathyrus sp.*) and late sown jowar were dominant crops. Drainage channels have since been constructed, making it possible to grow cotton. Even then the practice is to sow cotton in dry soil in anticipation of rain as the soil is not workable after the rains. Cotton occupies 57 % of the NSA. In parts where drainage is still poor, unirrigated wheat and lang are grown. Sub-soil water is brakish and unfit for irrigation and at many places even for drinking. Tree growth is sparse. The border along the bay of Cambay has saline lands being under the tidal effect of the sea.

The soil, rainfall and cropping pattern can be thus considered similar to Bhal tract of zone VIII. It has cotton and dry wheat as the characteristic crops as in Bhal tract zone VIII, but the dominance of cotton crop is assured each year by proper drainage^e. Thus, this zone can well be considered the southern extension of the zone VIII. Similar conditions extend in Hansot taluka across the river Narmada on its southern bank.

In times when communication by sea was important, for S.Gujarat black alluvial tract, the area around the port of Dahej in Wagra taluka of Bharooch district provided an outlet (Gujarati-Bara). Since then the area is known as Bara vibhag. Though Amod is not included in this zone, few kilometers west of Bharooch-Amod railway line of this taluka is (rest of Amod is in Kanam tract of deep black alluvial sub-zone) considered a part of this zone, along with area of Jambusar taluka a few km west of Kavi-Jambusar railway tract, i.e. excluding its Haveli tappa, Wagra taluka excluding the villages of Vachhnad, Rahad, Ankut, Saladra and Argama, villages of Ankleshwar, Chorad, Sankhwad, Navetha, Aksal, Bhadbhut, Megham, Manad, and Kesrod of Bharooch taluka and Olpad taluka of Surat district.

Zone XI : Littoral - paddy-wal zone

The coastal Surat and Bulsar districts are somewhat different from the hinterland. The Olpad taluka of Suret district has been grouped in zone X due to its similarity in regard to higher proportion of cotton with Jambusar, Vagara and Hansot of Bharooch district. Unlike this zone XI, Olpad taluka does not have much of paddy and wal crop. The talukas of Chorasi (Surat district), Nawsari, Gandevi and Bulsar of Bulsar district have been grouped into zone XI. This generally have more of paddy and wal

than in zone X. The area under cotton also gradually gets reduced southward and the paddy/wal crop pattern appears as a distinguishing characteristic of the zone (Table 5.11 - Annexure-2.10).

Zone XIII : Littoral - Groundnut-bajra zone

Geologically this zone is of more recent origin than the central part of the peninsula. The assured rainfall in most parts and better availability of sub-surface irrigation has enabled introduction of diversified cropping pattern. As this zone extends over a long arc of the peninsula correlations are definitely not uniform. Okha Mandal, Kalyanpur and small part of Khambhaliya can be considered to be a distinct tract and a part of the arid zone. They ~~are~~ have as much as 57 % of the NSA under bajra and 33 % of the area under jowar and very little area under groundnut and cotton crops. The talukas of Kalyanpur, Porbandar and Ranavav have considerable similarity in regard to cropping pattern. Groundnut is the dominant crop, but its proportion is not as much as the main part of the peninsula, falling in zone IX ; groundnut, bajra and cotton ~~form~~ form the cropping system with area under bajra and cotton not too widely different.

The talukas of Mangrol, Maliya and Veraval too have large area under groundnut and less area under bajra, as is the case in the talukas like Dhoraji and Upleta of zone IX north to it, but they do not have any significant area under cotton, thus, distinguishing it from the talukas north of it (Table 5.12 - Annexure 2.11). Eastward Kodinar and Una talukas have similar conditions, but a lesser proportion of area is under groundnut. Like the talukas of Mangrol etc., it has a larger proportion of area under perennial crops particularly sugarcane. Mango, coconut and banana are the other perennial fruit trees grown in the area and for which the zone is well known. Tree growth provides a good cover to the soil unlike in the rest of the peninsula. The littoral talukas of Bhavnagar district form the eastern end of this zone. In some of them perennial crops are common, coconuts being a preferred plantation crop. Rainfall and ground water are, however, not the same as in coastal talukas of Junagadh district. In general, though this zone is constituted of all littoral talukas of the peninsula, there is scope of sub-dividing them, after a study of their soil, rainfall and prevailing temperature.

Zonal variation in rainfall

In regard to the total annual precipitation, considerable variations are observed in various parts of the state. The highest annual mean precipitation of 1676 mm is in the zone III in the s-e part of the state. In the eastern residual belt, rainfall from the zone III decreases northward; zone II north of it receives 1105 mm and zone I 964 mm. The black soil cotton zone III has annual rainfall of 1147 mm. The mean annual rainfall also decreases northward in the alluvial plain and the minimum rainfall is met with in the northern most zone VII. In the peninsular area, the difference between rainfall of the zone IX and the littoral zone X is not much (Map-2 - Rainfall tables 1, 2.0, 2.1 & 2.2).

The frequency distribution of c.v. for the zones is given in Table 2.2. Variability is the minimum in zone III, which also has the highest mean annual rainfall. In the zones IV & V, though the reliability is little less than zone III, it is comparatively more than other zones. The greatest range of variability is met with in zone I, maize growing area of the state, which is known as chronically drought affected area. Similar wide variability is also experienced in the zone VII in the northern part of the state where also droughts are a frequent phenomena.

Zonal differences in temperature and relative humidity

The average minimum temperature of 9°C is experienced in zone VI and zone IX, during the 3rd and 4th weeks of January; unlike in zone V (i.e. ~~sandy~~ sandy loam soil) where the average minimum temperature 10.5°C is experienced in the 1st week of January. In zone XI (i.e. Littoral soil - paddy-wal) the average minimum temperature is experienced in the 4th week of January (12.0°C), likewise in its neighbouring zone IV (i.e. deep black soil - cotton) also the average minimum temperature is experienced in the same week (13.4°C) and even in the zone VIII (i.e. clay alluvial soil - cotton/dry wheat) also the average minimum temperature is experienced in the 4th week of January (11.7°C). While in the zone XII (i.e. Littoral soil- bajra-groundnut) and zone I (i.e. Residual soil - Maize), the minimum temperature reached is upto 15.8°C and 15.9°C in the first week of February, which is warmer than the rest of the zone (Table-6.0). In above first 6 zones, the average minimum temperature varies from 9.0°C to 13.4°C and in most of the zones, the minimum temperature experienced is in the last days of January.

In Gujarat, frosts are known to damage certain crops like cotton, tobacco and brinjal, which are considered susceptible to frost damage. It would be of interest to study the existing data of temperature with regard to frequency of occurrence of frost and the time of occurrence in the various zones of the state.

As regards maximum temperature, the variation between the zones is 32.8°C to 43.9°C . The maximum temperature of 43.7°C is experienced in the zone V (i.e. Sandy-loam soil - bajra-tobacco) in the first week of May (20th week). In all zones, except zone XI (i.e. Littoral soil - paddy-wal) and zone XII (i.e. Littoral soil - Bajra-groundnut), the maximum temperature is experienced in the first week of May (i.e. 20th week), while maximum temperatures of 38.0°C and 32.9°C are experienced earlier in the zones XI and XII (15th & 17th week).

The minimum average relative humidity of 65.3% , 63.9% & 51.3% are experienced in the first week of February (i.e. 6th week) in the zone IV, zone XI and zone I respectively, while in zone IX, it is 72.2% experienced in the first week of January as well as in the first week of February (i.e. 6th week). The variation in relative humidity in these four zones is 90.3% to 65.3% , 90.0% to 63.9% , 93.4% to 51.3% and 95.1% to 72.2% .

respectively. The maximum relative humidity in the above zones is experienced from July end ~~to~~ to August (30th, 33rd & 32nd week respectively). In zone VIII, the range of relative humidity is between 87.2 % to 53.6 %, the maximum is experienced in the first week of August (32nd week), while minimum in the last week of January (5th week).

In all the zones, except zone V & VI, the minimum average relative humidity is experienced in the first week of February, while in the zone V & VI, it is experienced in the end of February and first week of March (10th to 9th week) respectively. The maximum average relative humidity is experienced in all the zones in between the last week of July to the end of August (30th to 34rd week).

Zonal differences in soil types

In the eastern hilly region, which is divided into 3 zones, the residual soils are of varied types. In zone I, the predominant group is loamy, sandy loam and loamy sand, but in zone II, the largest number of samples are clay. This, however, may not be considered as a final picture, as more representative soil analysis may alter the relative proportion of soil types. In zone III, which also has residual soil, clay, loamy, sandy loam, loamy sand and clay loams are met with in fairly large measure. The other residual soil, groundnut zone IX, has more of clayey soils.

In the alluvial plain, the southern zone IV has more proportion of clayey and clay-loamy soils, though loam and sandy loams are also represented. Further north, zone V, has predominantly sandy loam soils. While zone VI has an even larger proportion of sandy loam soil, but to differentiate it , the larger extent of loamy sand, as compared to zone V, it is emphasized. The differentiation of zone V & VI as already pointed out, is not clear; soil types would indicate that zone V & VI are not significantly different. However, in view of needed further study, a difference is maintained between zone V & VI. The northernmost zone VII has soil types ranging from sandy clay loam to sandy. It has sandy loam and loamy sand soils, however, this zone has the largest proportion of sandy soil when compared to the rest of the zones, and particularly zone V & VI which also have sandy loam and loamy sand soil. It is, therefore, proper to consider sandy soil as characteristics of the zone.

The sandy clay-loam soil are predominant in zone VIII, though in places sandy loam and clay soils are met with. All the three zones, X, XI & XII have clay soils as dominant types (Table-3.0).

Variations in sowing periods

The sowing periods of important crops grown in different zones have been compared. As regards bajra (Table 4.0), it is an important crop in six zones (V, VI, VII, VIII, IX & XII). It is observed that sowing commences earlier in the zones which are somewhat southern viz. zone V - bajra-tobacco and zone VI - bajra-cotton zone, and it is later in the zone VII - sandy soil - bajra-pulse zone. This is obviously due to the late commencement of monsoon in the latter zone. In the zone IX - residual soil groundnut,

the commencement of sowing time is similar to zone V and VI, but in the zone VIII, the commencement of sowing of bajra is generally later, which is possible due to the heavier soils and the time taken for the soils to reach optimum conditions for sowing.

As regards groundnut (Table-4.1), the sowing periods of groundnut in zone I, zone IX and zone XII, have been studied. In the zone I - residual soil maize and zone IX - residual soil groundnut, there are some differences in the sowing period. In the latter, there appear two peaks - one in the first week of June and the second in the 4th week of June and first week of July. This difference is probably associated with two spells of rains or may be connected with the sowing period of the erect and spreading varieties of groundnut, as both of them are grown in different parts of the same zone, but the regions where they are growing have not been delineated. Two peaks of sowing periods are also observed in the zone XII - littoral groundnut-bajra, which is adjacent to zone IX - residual soil groundnut.

As for cotton (Table-4.2), cotton is grown in a large number of zones. Sowing period seems to be little earlier in zone I, zone V and zone VI; the former two with residual soil and the latter with deep black soil. In the latter, there is a general practice of sowing cotton in the dry soil before the commencement of the monsoon. The period of sowing from first week of June to the first week of July, which is common in the zone I, zone II and zone IV is also the case in zone IX. Later sowing seems to be characteristic of zone VIII - clay alluvial cotton/dry wheat and zone VI - loamy sand bajra and in the zone XI - littoral paddy/wal. In zone VIII, initial heavy rains often leads to late sowing of cotton and may even necessitate resowing of the crop in case of heavy rains detrimental to the growing cotton seedlings.

It is seen that in the central zone VIII, most of the sowing of wheat is in the 42nd week to 48th week. In this zone, the durum wheat is predominantly grown. Likewise in the zone X - littoral, durums are cultivated under similar conditions and are sown early. The third zone in which such early sowings of wheat are practiced, is the zone II where wheat usually follows as a second crop after paddy. The optimum time of sowing of irrigated wheat is middle of November and if it is sown earlier, then the germination gets reduced. It will be seen that in all the other zones, where generally aestivum wheat is grown, the sowing is generally between the 45th and 48th week, which is later than is the case with durum wheat.

Variations in harvesting periods

Harvesting of bajra is little earlier in zone V and zone VI where most of the crop get harvested by the first week of October. In all the other zones where bajra is grown, the harvesting is later, where it is, however, mostly completed by the middle of October (Table-4.0 A). The harvesting period of groundnut (Table-4.1 A) follow a pattern similar to

its sowing in zone XIII, where there are two peaks of harvest corresponding to the observed two peaks of sowing. In zone I, harvesting of groundnut is mostly completed by mid-November, but in case of zone IX and XII, which are more important groundnut growing area, harvesting is earlier than in zone I. In regard to cotton (Table-4.2A), varietywise harvest period is not available and therefore, it is difficult to explain many of the variations observed in the harvesting period of cotton. The first picking begins in about the second week of December in zone I and in the 4th week of December in zone II both growing the same variety, while in zone V & VI, first picking begins in the first week of January. In zone V, the first picking is concentrated in the month of January. Picking is little later in zone IV - deep black soil cotton, and the adjoining zone X. In zone VI, also picking is a little later. For a crop which has such a staggered harvesting period, it is very difficult to distinguish the commencement of harvest in various crop zones. Nevertheless, an attempt is made to note the main differences.

As the sowings are completed earlier in zones growing durums, the wheat harvest also begins earlier there. The earliest wheat harvest is in zone II It falls between 3rd week of February to 3rd week of March (8th to 12th week). In the littoral zone X also, the harvest is between 2nd week of February to 1st week of March (7th to 10th week). In the other zones where aestivum varieties are dominant, the harvest usually falls between 1st week of March to 4th week of March (10th to 13th week). The harvest period is little earlier in the zone IX growing aestivum wheat unlike the rest of the state growing this wheat. This is attributable to the inadequacy of water in the latter part of the growing period and consequent forced ripening of the crop. In general, however, most of the wheat varieties belong to aestivum group, and the largest coverage is by these varieties. The main harvest period of wheat for the state can, therefore, be considered for 4th week of February to 4th week of March (9th to 13th week).

Summary

A need has been felt to examine the cropping pattern prevailing in various parts of Gujarat state and to delineate zones with homogenous characteristics. In doing so, a general description of the geology of Gujarat, the characteristics of rainfall, temperature, soils and relative humidity pattern prevailing in the state have been described. The smallest unit used for delineation of zones is a taluka, for which crop area statistics are available. The crops have been grouped in 4 categories viz. Group A short duration kharif crops; Group B long duration kharif crops; Group C rabi crops; Group D others which includes many perennial crops. The predominance of a group of crop is related to the soil and rainfall conditions. In addition, it has become necessary to pick out one or two characteristic crops of the area, some times even though, it may not have the largest acreage. This enables identification of the crop zone more readily. Using the crop statistics of these groups of crops prevailing

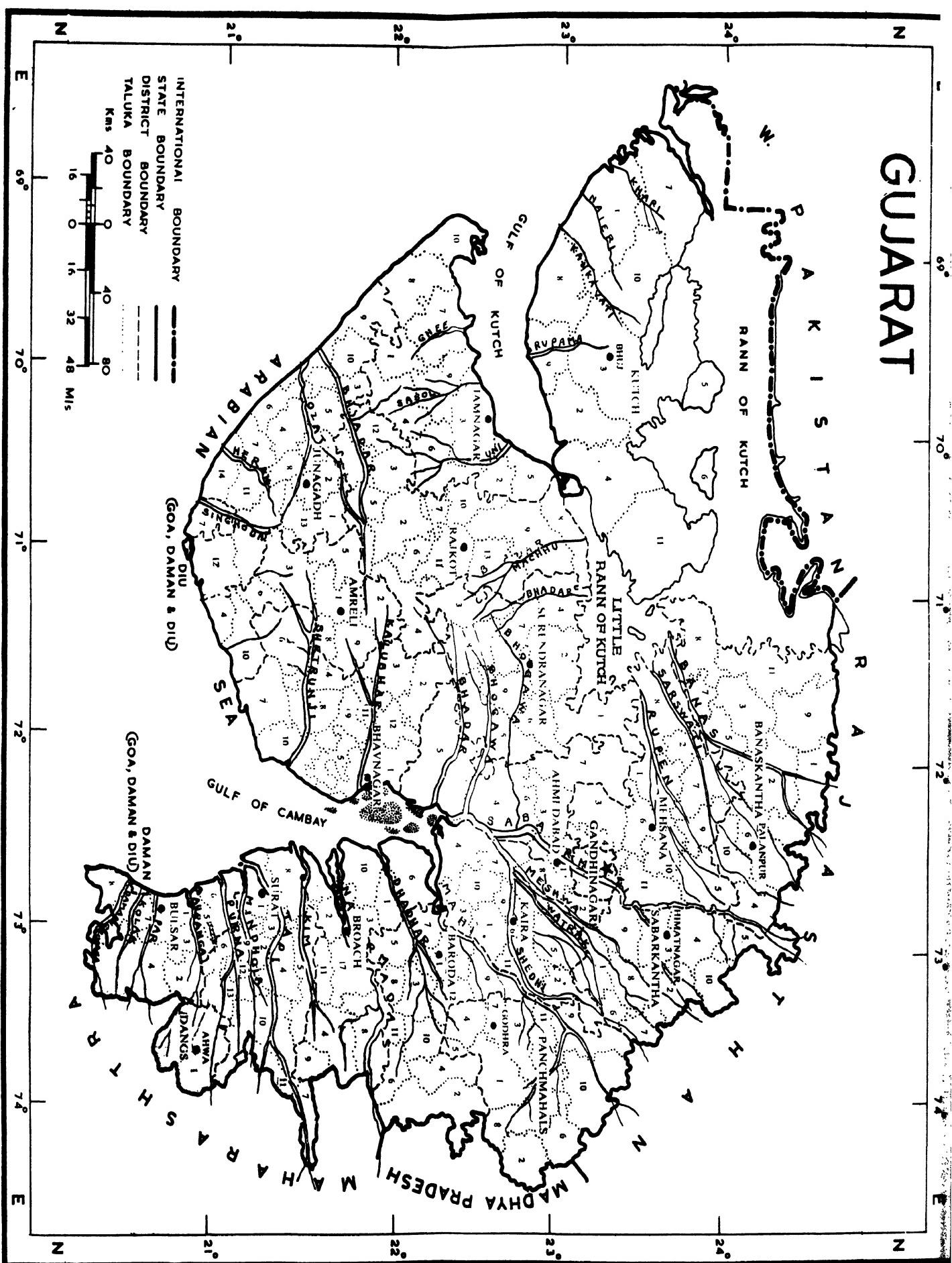
in the talukas, 12 crop zones have been defined. These are - zone I residual soil maize zone, zone II residual soil cotton zone, zone III residual soil paddy zone, zone IV deep black soil cotton zone, zone V sandy loam soil bajra tobacco, zone VI loamy sand bajra cotton, zone VII sandy soil bajra pulses, zone VIII clay alluvial cotton dry wheat, zone IX residual soil groundnut, zone X littoral cotton dry wheat, zone XI littoral paddy wal, zone XII littoral groundnut bajra.

The textural classification of soils from samples available from all sources collected for the purposes other than demarcating zones have been presented. The differences thereof prevailing in various zones have been used at some places to identify certain zones. In addition, available data of sowing and harvesting periods of major crops have been collected and the periods of sowings of these crops in the various zones and in the state, have been described and the differences observed have been noted. Likewise, the average weekly maximum and minimum temperature and the weekly relative humidity for the state are given along with the information available for some zones. Certain differences which were observed in this regard have also been discussed.

Acknowledgement

Describing the crop zones of a state like Gujarat, which has great diversity, is a task which cannot be fulfilled by an individual or two. For writing this article, support had to be sought from many people both in the department of agriculture and outside. Without their cooperation this voluminous work would not have been completed even in time longer than it took to do so. Particular mention is made of Dr. M. V. Kanjaria, the Soil Specialist, Agricultural University, Shri R. G. Desai, Soil Survey Officer. The textural classification of soils though was mainly obtained from the Soil Specialist, Junagadh & the Soil Survey Officer, Navsari, the available data with the soil survey organization of the P.W.D. was also used, for which thanks are due to Shri Bapat. Last, but of even greater importance are the many persons in the statistics branch of this directorate. This section is so large that the entire list of persons, who have helped us in completing this work, would be unwieldy. Nevertheless, the help rendered by Shri M. C. Majmudar, Shri V. G. Ballar, & Shri B. M. Patel is acknowledged with grateful gratitude. Grateful thanks are due to Shri R. S. Patel, who had initially drawn all the graphs presented here. The information section of the directorate have used all their energy in getting the bulletin printed in a short time.

GUJARAT



OVER LEAF : Map of Gujarat showing physical features. FIGURES indicate altitude in meters from sea level.

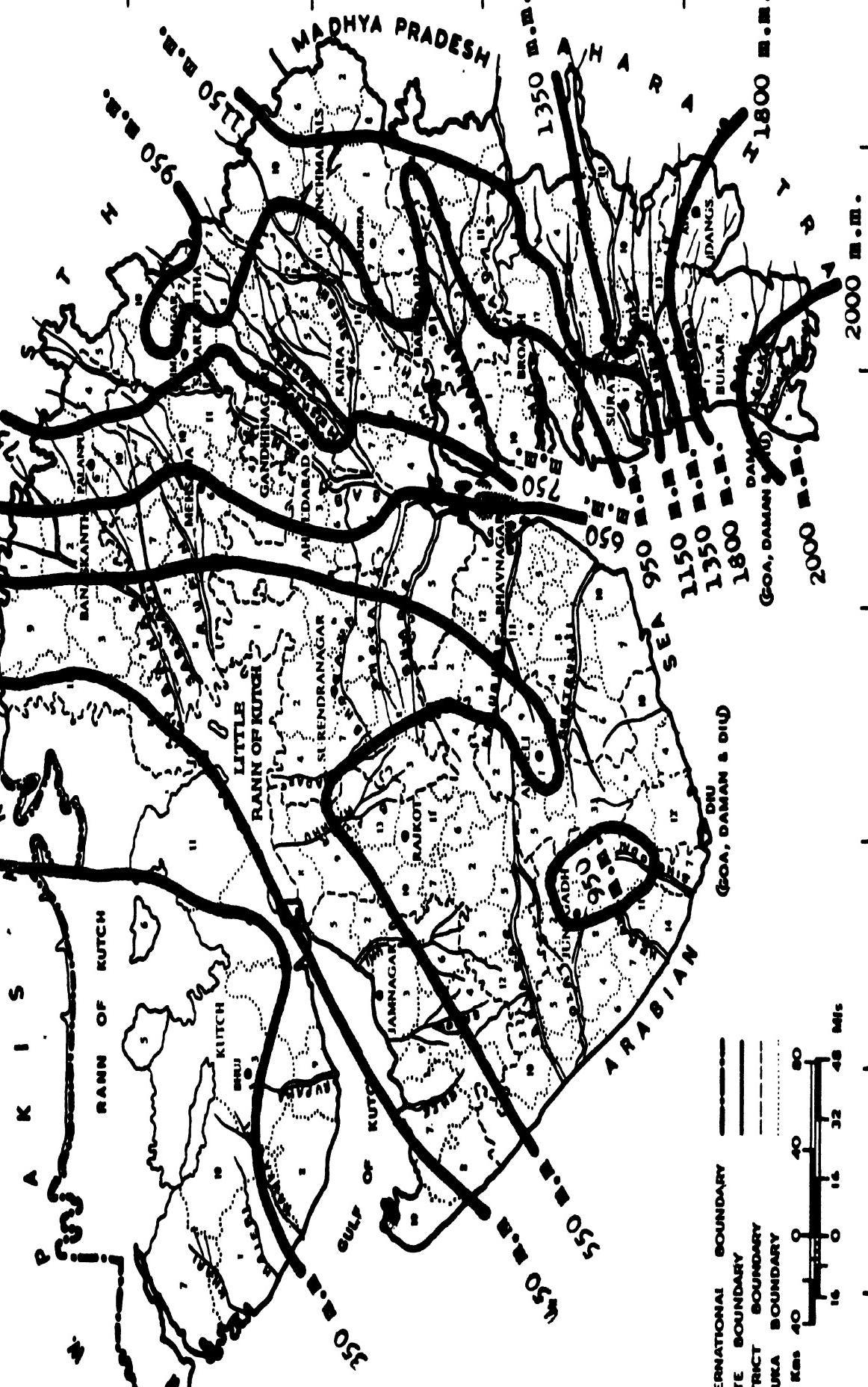
The numbers are indicative of talukas as listed below.

AHMEDABAD :	BULSAR :	MHSANA :
1 City	1 Valsad	1 Chanasma
2 Dehgam	5 Gandevi	7 Patan
3 Daskroi	6 Navsari	8 Sami
4 Dhoaka	7 Virangam	9 Sidhpur
	4 Dharampur	10 Visnagar
	8 Umbargaon	11 Vijapur
	6 Mehsana	
AMRELI :	DANGS :	PANCHMAHALS :
1 Amreli	1 Ahwa	1 Deogad-Baria
2 Babra	6 Khamba	2 Dahod
3 Dhari	7 Kodinar	3 Godhra
4 Jaffrabad	8 Lathi	4 Halol
5 Kunkawav	9 Lilia	5 Jambughoda
	10 Rajula	6 Jhalod
BARODA :	GANDHINAGAR :	RAJKOT :
1 Vadodara	1 Gandhinagar (State Capital)	1 Dhoraji
2 Chhota-Udepur	7 Padra	2 Gondal
3 Dabholi	8 Sinor	3 Jam-Kandorna
4 Jambugam	9 Savli	4 Jasdan
5 Karjan	10 Sankheda	5 Jetpur
6 Naswadi	11 Tilakwada	6 Kotda-Sangani
	12 Waghodia	7 Lodhika
BROACH :	JUNAGADH :	SABARKANTHA :
1 Amod	1 Bhesan	1 Bayad
2 Ankleshwar	2 Junagadh	2 Bhitoda
3 Bharuch	3 Kutiyana	3 Bhujnagar
4 Bediapada	4 Keshod	4 Idar
5 Hansot	5 Manavadar	5 Khedbrahma
6 Jambusar	6 Mangrol	6 Mahinda
	7 Malia	7 Nizar
	8 Mendarda	8 Olpad
	9 Porbandar	9 Palsana
	10 Ranawao	10 Songadh
	11 Tala	11 Uchhal
	12 Una	12 Valod
	13 Visavadar	13 Vara
	14 Veraval	
BHAVNACIAR :	KAIRA :	SURAT :
1 Bhavnagar	1 Anand	1 Choryasi
2 Botad	2 Balasinor	2 Barodli
3 Gadhadha	3 Borsad	3 Kanrej
4 Gariadhar	4 Khambhat	4 Mandvi
5 Ghogha	5 Kapadvanj	5 Mangrol
6 Kundla	6 Kheeda	6 Mahinda
		7 Nizar
BANASKANTHA :		
1 Dhanera	7 Radhanpur	1 Abdassa
2 Deesa	8 Sonthalpur	2 Anjar
3 Deodar	9 Tharad	3 Bhuj
4 Danta	10 Wadgam	4 Bhachau
5 Kankrej	11 Wao	5 Khavda
6 Palanpur		6 Khadir
		SURENDRANAGAR :
		1 Dasada
		2 Dhrangeadhra
		3 Chotilla
		4 Halvad
		5 Limbdi

GUJARAT

ISOHYTE MAP OF GUJARAT STATE.

MAP-2



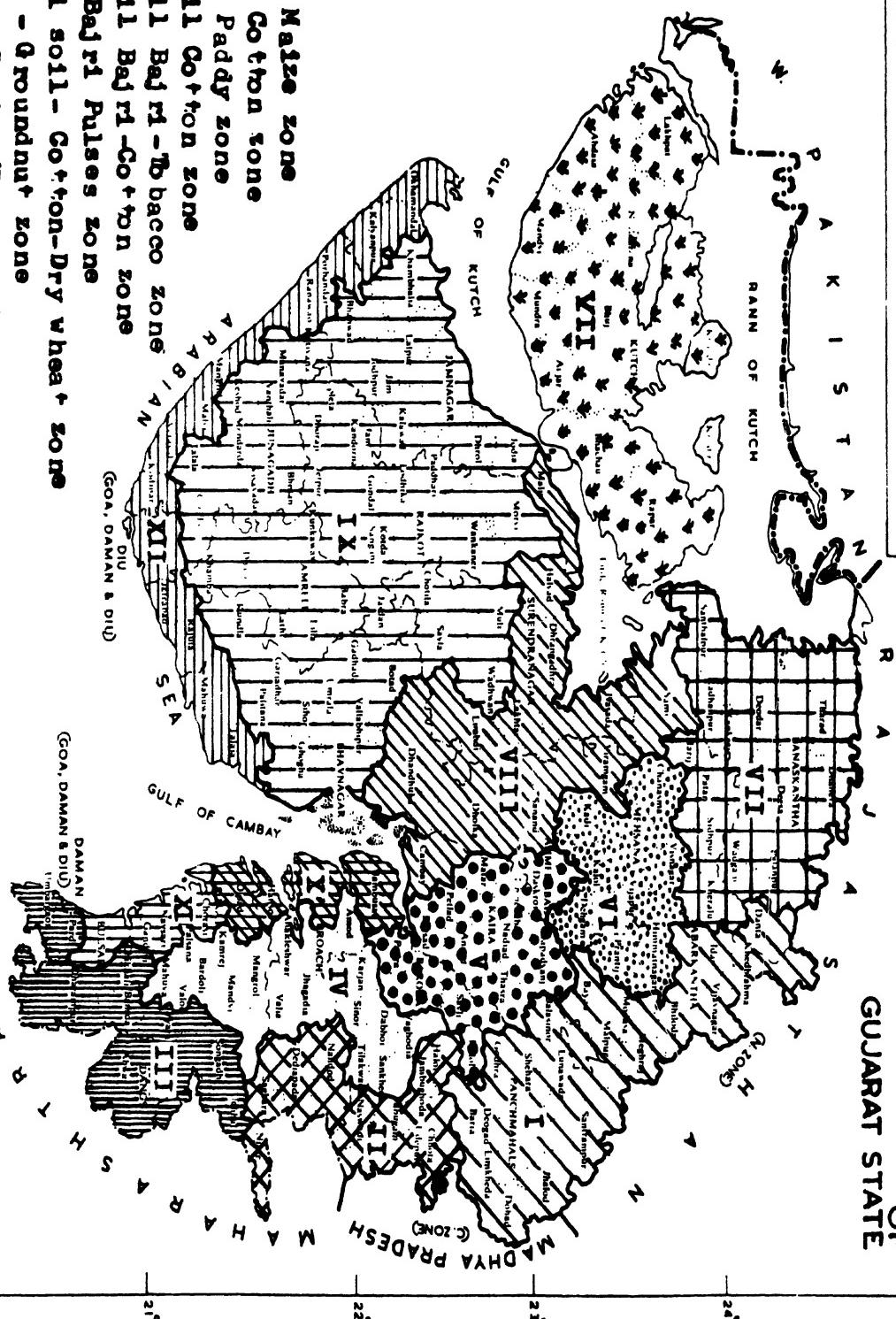
MAP-3

INTERNATIONAL BOUNDARY
TOWNS BOUNDARY
STATE BOUNDARY
DISTRICT BOUNDARY
TALUKA BOUNDARY

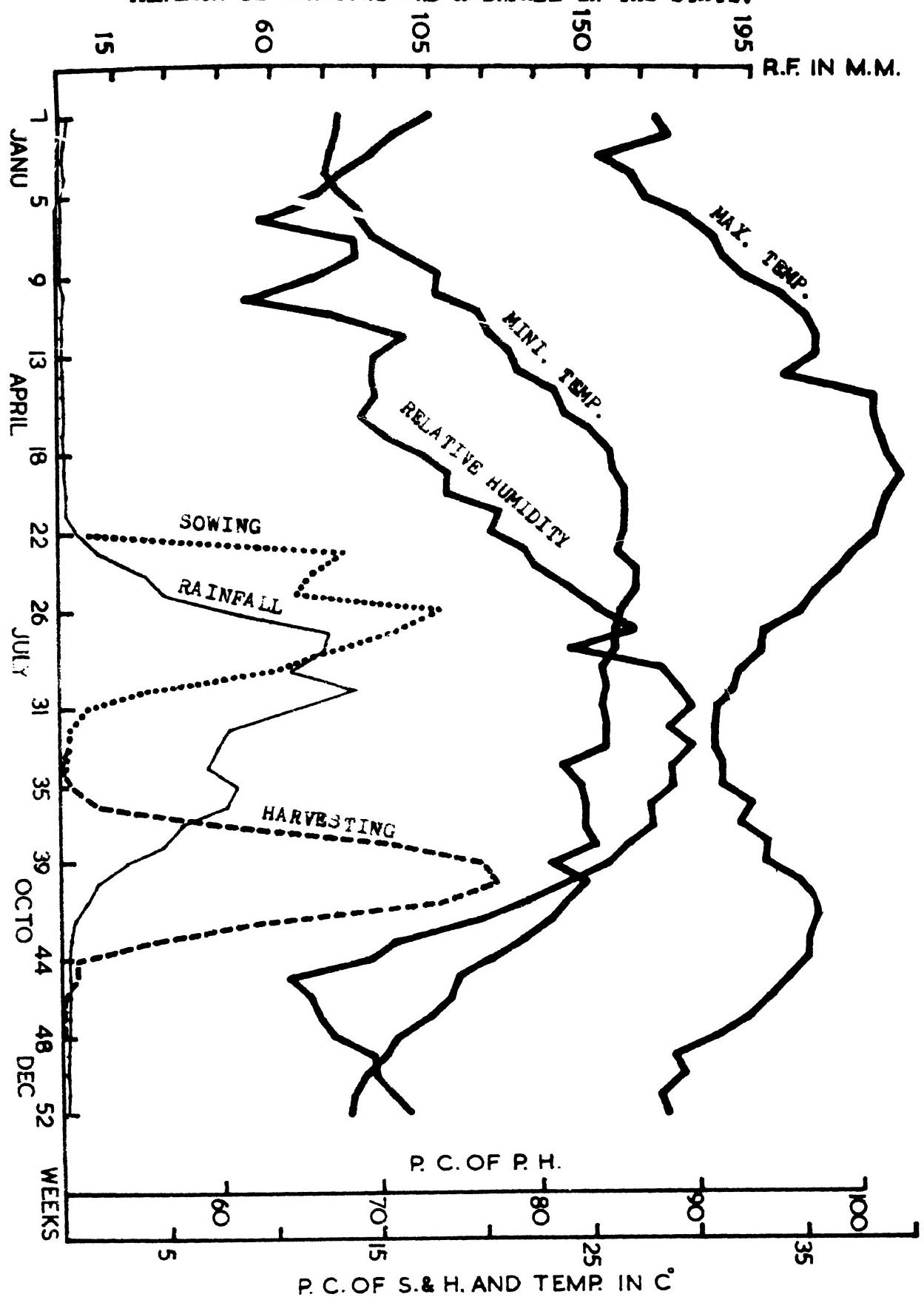
GUJARAT MAP SHOWING CROP ZONES OF GUJARAT STATE

Ref:

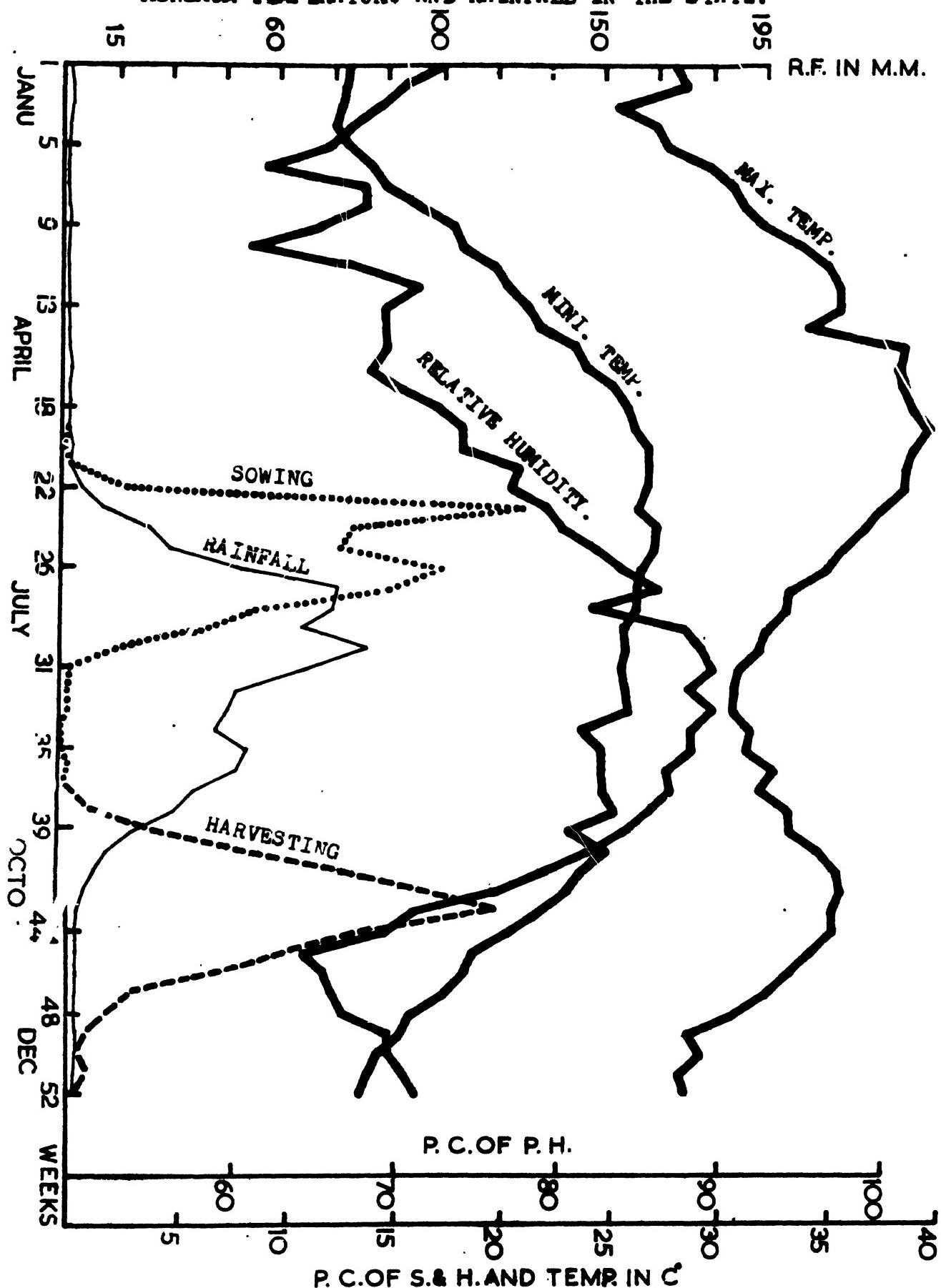
- Zone-I Residual soil Maize zone
- Zone-II Resi dual soil Cotton zone
- Zone-III Resi dual soil Paddy zone
- Zone-IV Deep Black soil Cotton zone
- Zone-V Sandy loam soil Bajri - Tobacco zone
- Zone-VI Loamy sand soil Bajri - Cotton zone
- Zone-VII Sandy soil - Bajri Pulses zone
- Zone-VIII Clay Alluvial soil - Cotton - Dry wheat zone
- Zone-IX Residual soil - Groundnut zone
- Zone-X Littoral - Cotton/Dry wheat zone
- Zone-XI Littoral - Paddy-Maize zone
- Zone-XII Littoral - Groundnut - Bajri zone



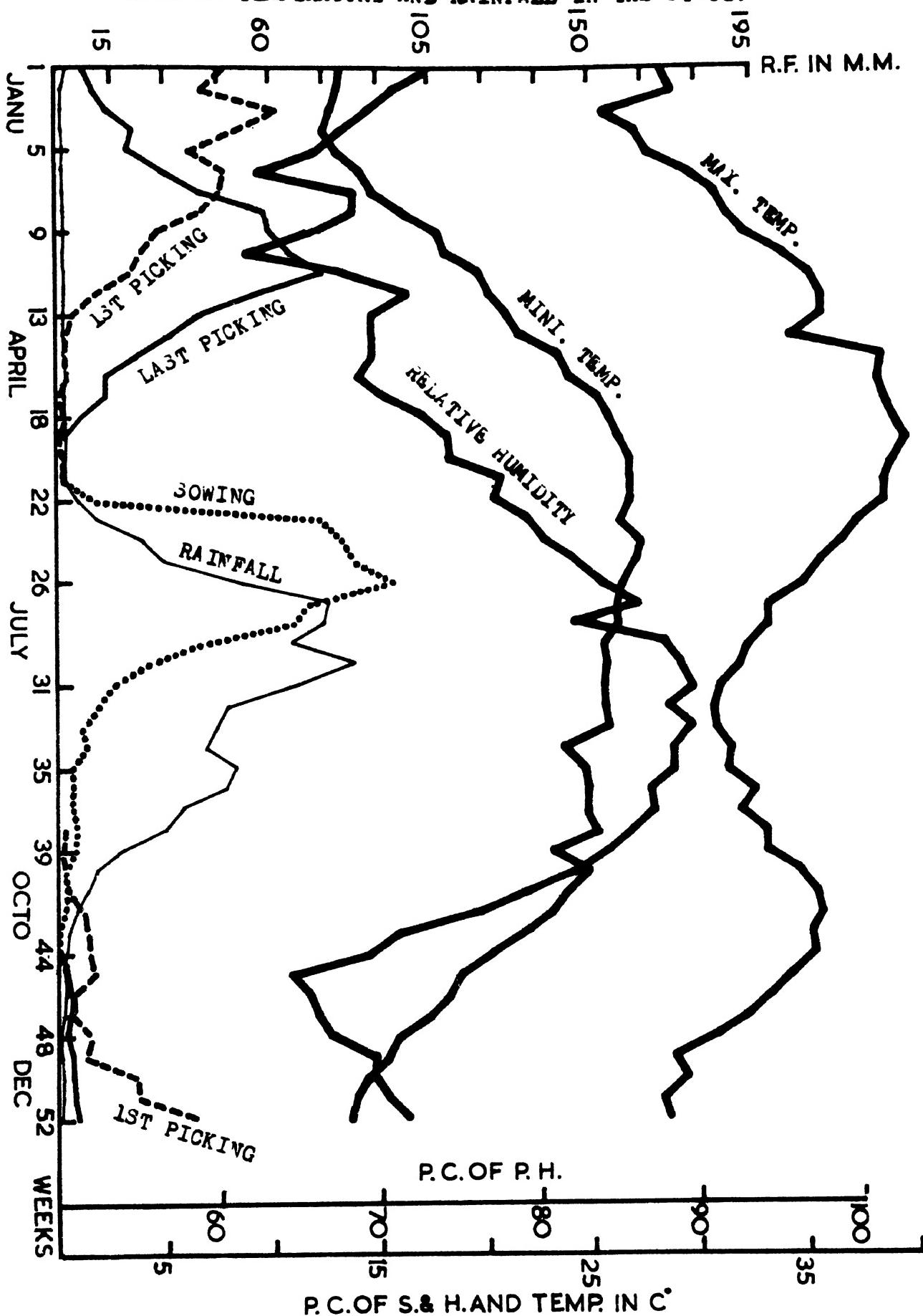
A 1. GRAPH SHOWING WEEKWISE SOWING AND HARVESTING OF
BAJRI, ALONG WITH AVERAGE WEEKLY MAXIMUM AND
MINIMUM TEMPERATURE AND RAINFALL IN THE STATE.



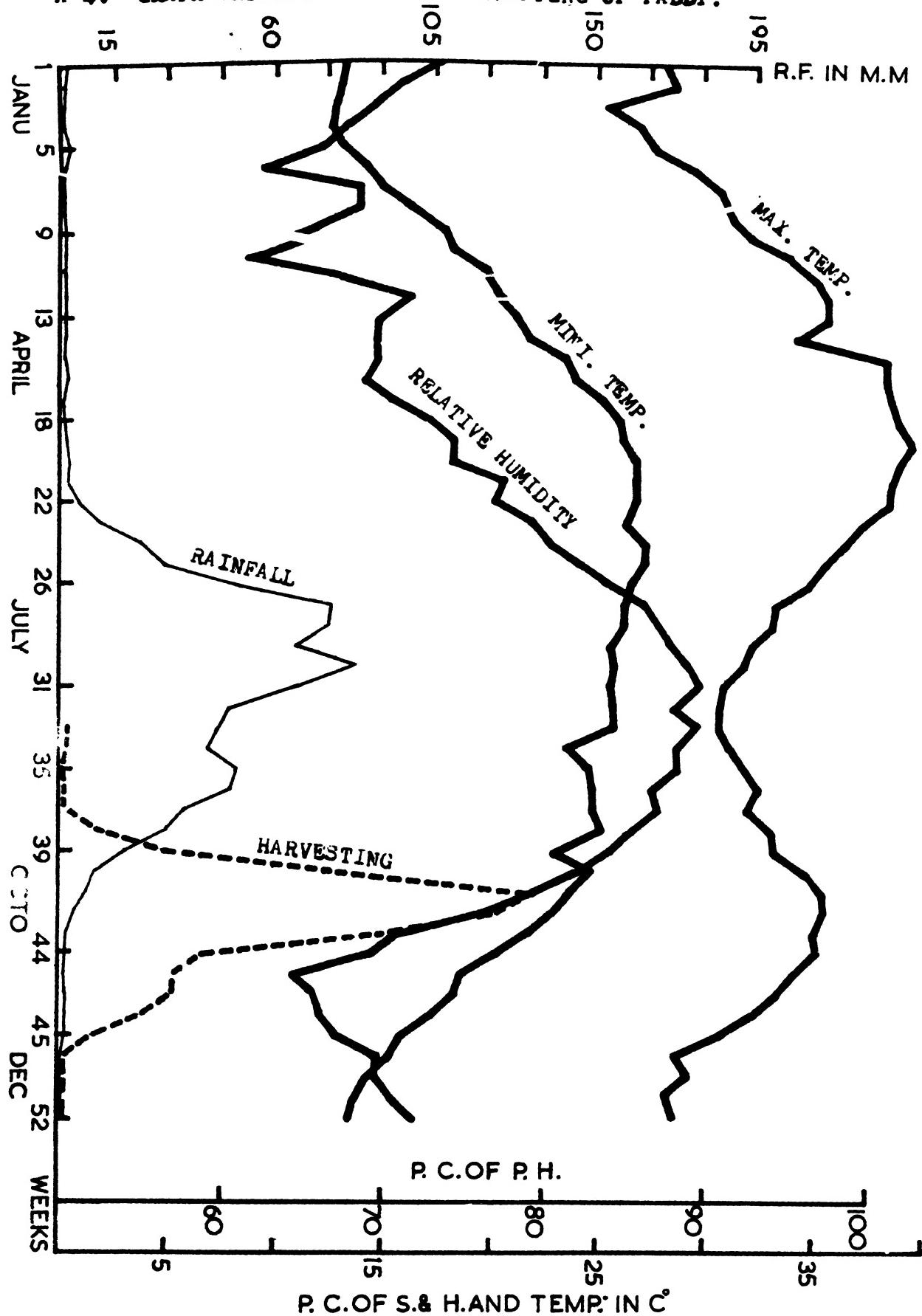
A 2. GRAPH SHOWING WEEKWISE SOWING AND HARVESTING OF GROUNDNUT, ALONG WITH AVERAGE WEEKLY MAXIMUM AND MINIMUM TEMPERATURE AND RAINFALL IN THE STATE.



A 3. GRAPH SHOWING WEEKWISE SOWING AND HARVESTING OF COTTON, ALONGWITH AVERAGE WEEKLY MAXIMUM AND MINIMUM TEMPERATURE AND RAINFALL IN THE STATE.

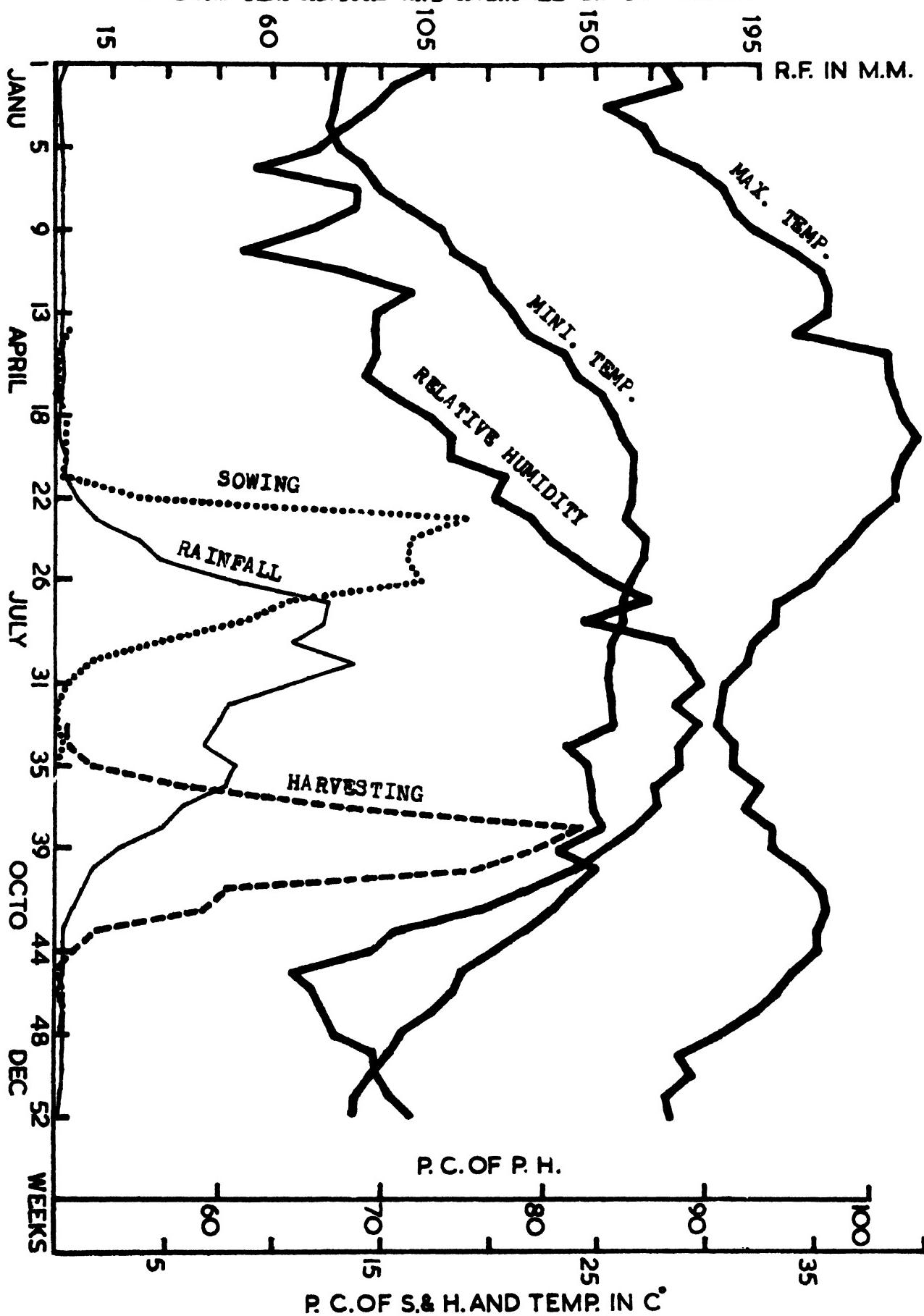


A 4. GRAPH SHOWING WEEKWISE HARVESTING OF PADDY.

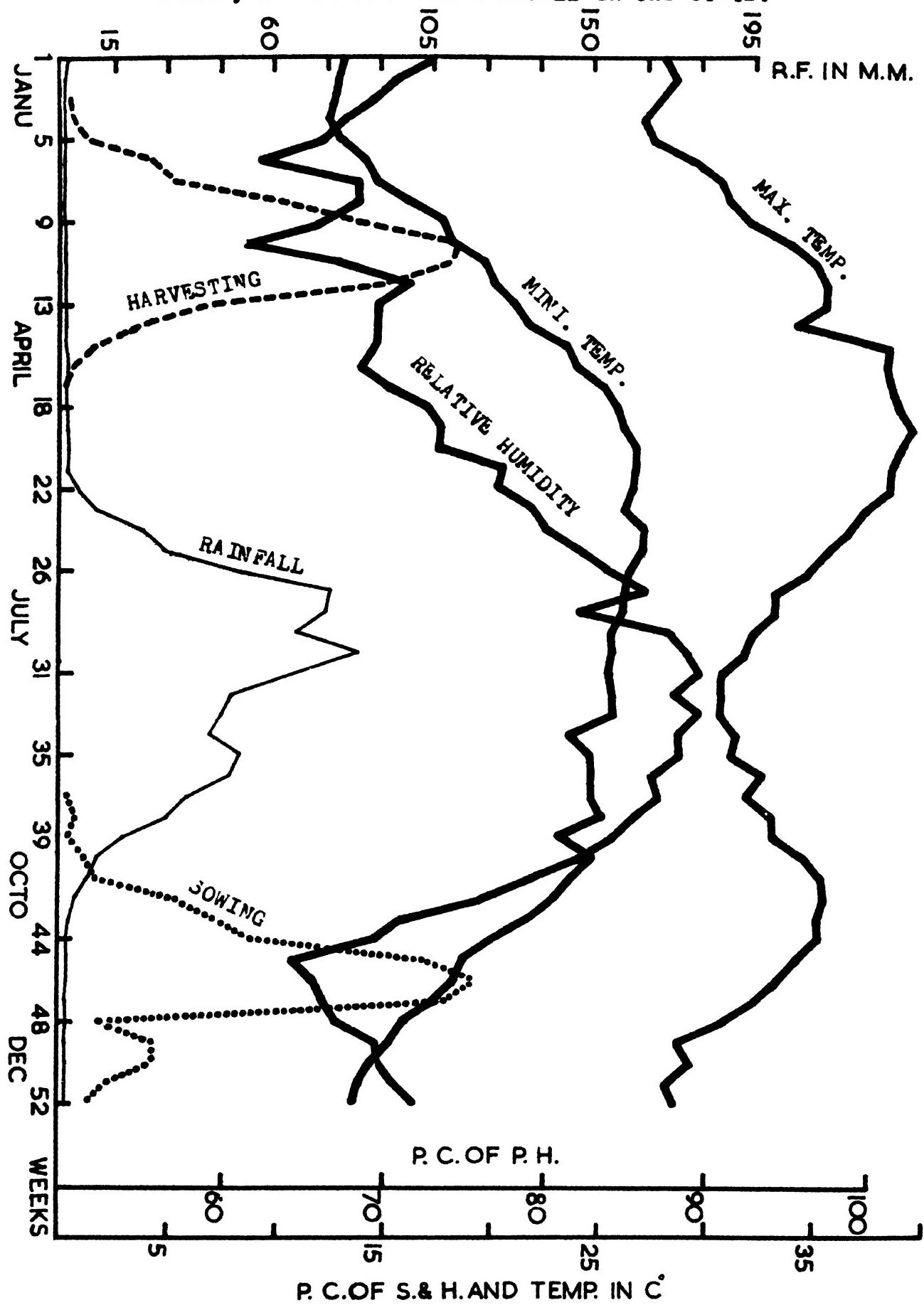


VIII

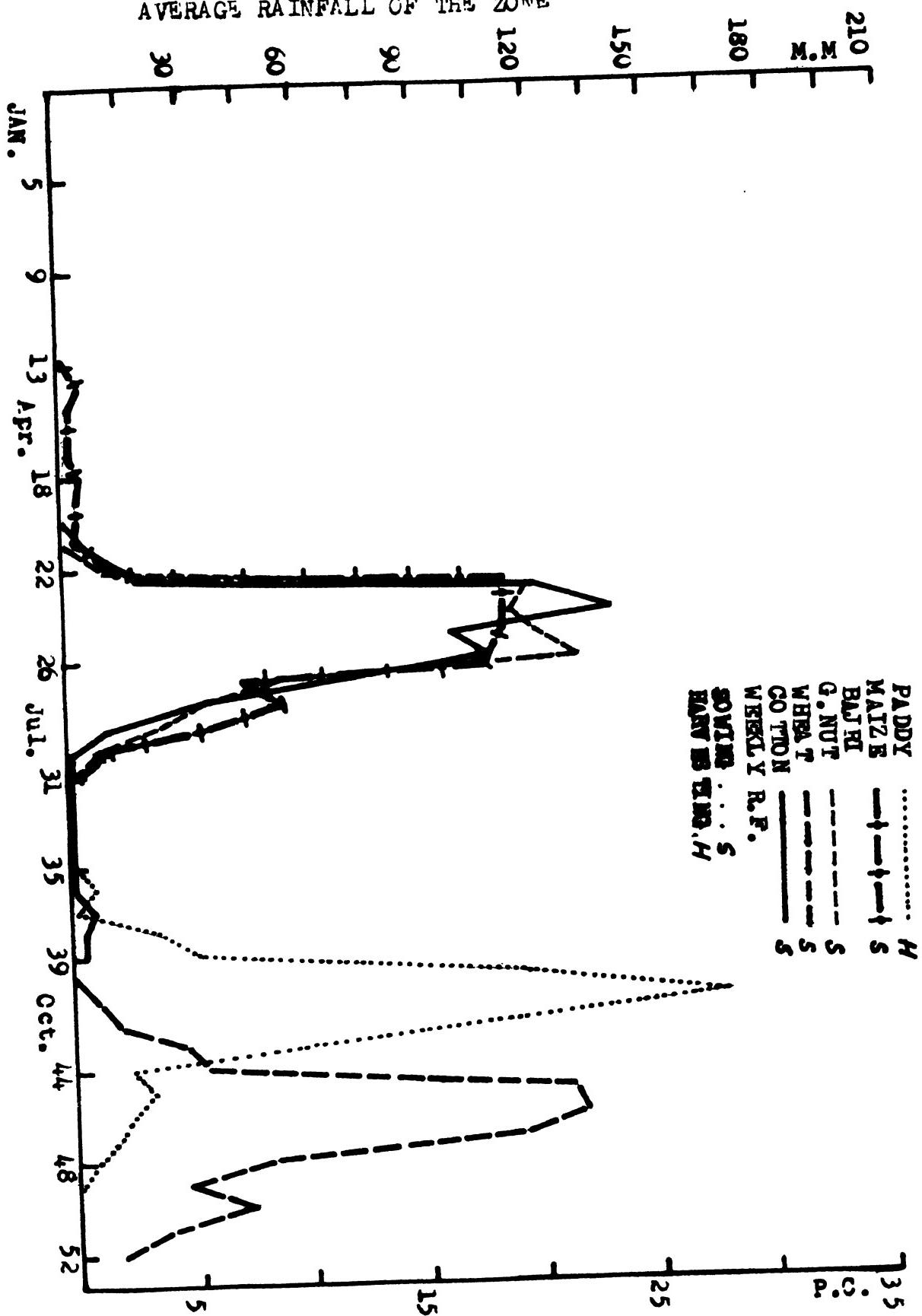
A 50. GRAPH SHOWING WEEKWISE SOWING AND HARVESTING OF MAIZE, ALONG WITH AVERAGE WEEKLY MAXIMUM AND MINIMUM TEMPERATURE AND RAINFALL IN THE STATE.



A 6. GRAPH SHOWING WEEKWISE SOWING AND HARVESTING OF WHEAT, ALONGWITH AVERAGE WEEKLY MAXIMUM AND MINIMUM TEMPERATURE AND RAINFALL IN THE STATE.

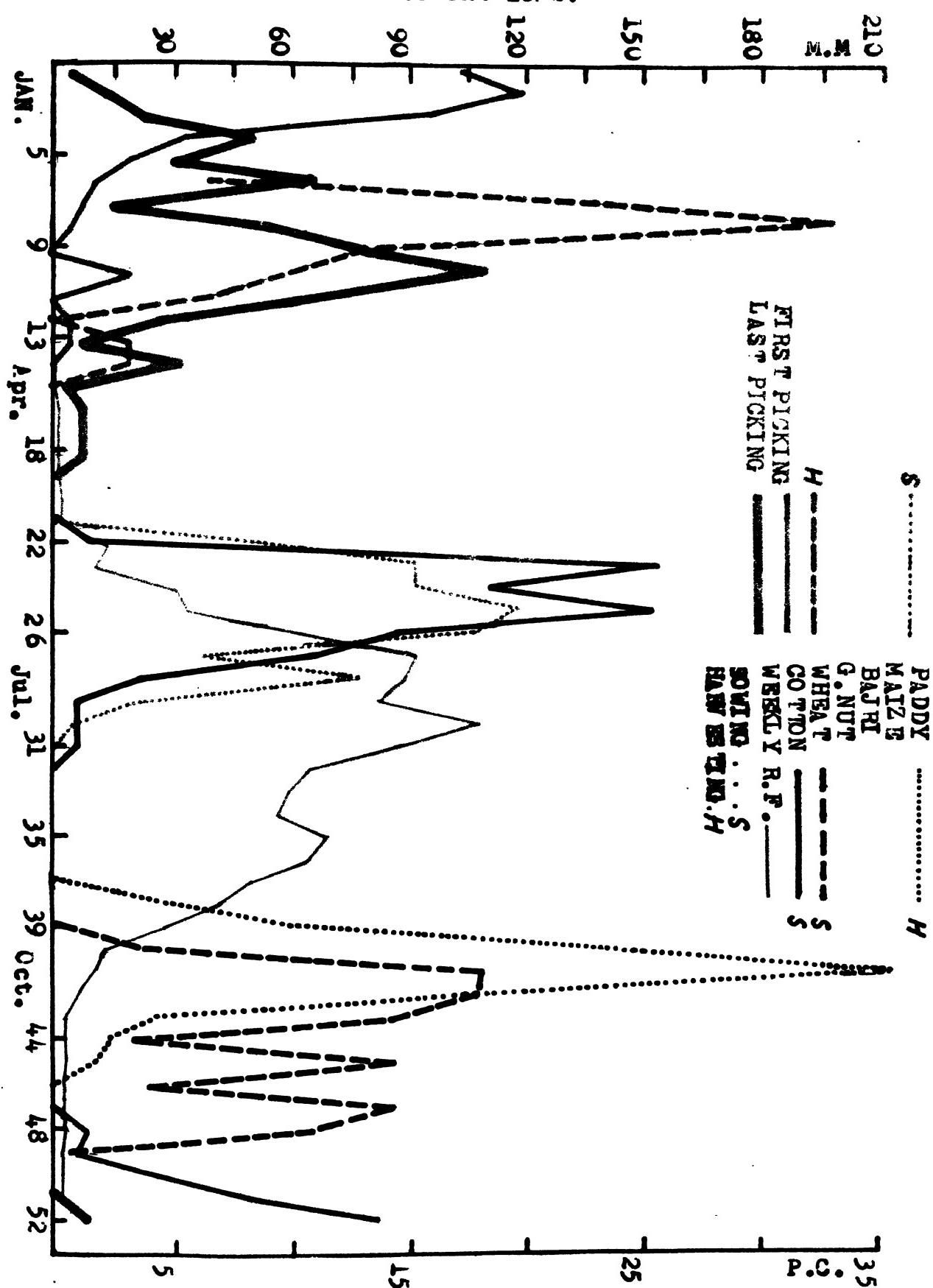


B 01 ZONE I. RESIDUAL SOIL-MAIZE ZONE. X
GRAPH SHOWING WEEKWISE SOWING, HARVESTING OF
PREDOMINANT CROPS OF THE ZONE, ALONG WITH THE
AVERAGE RAINFALL OF THE ZONE



B 02 ZONE II RESIDUAL SOIL-COTTON ZONE.
GRAPH SHOWING WEEKWISE SOWING, HARVESTING OF
PREDOMINANT CROPS OF THE ZONE, ALONG WITH
AVERAGE RAINFALL OF THE ZONE.

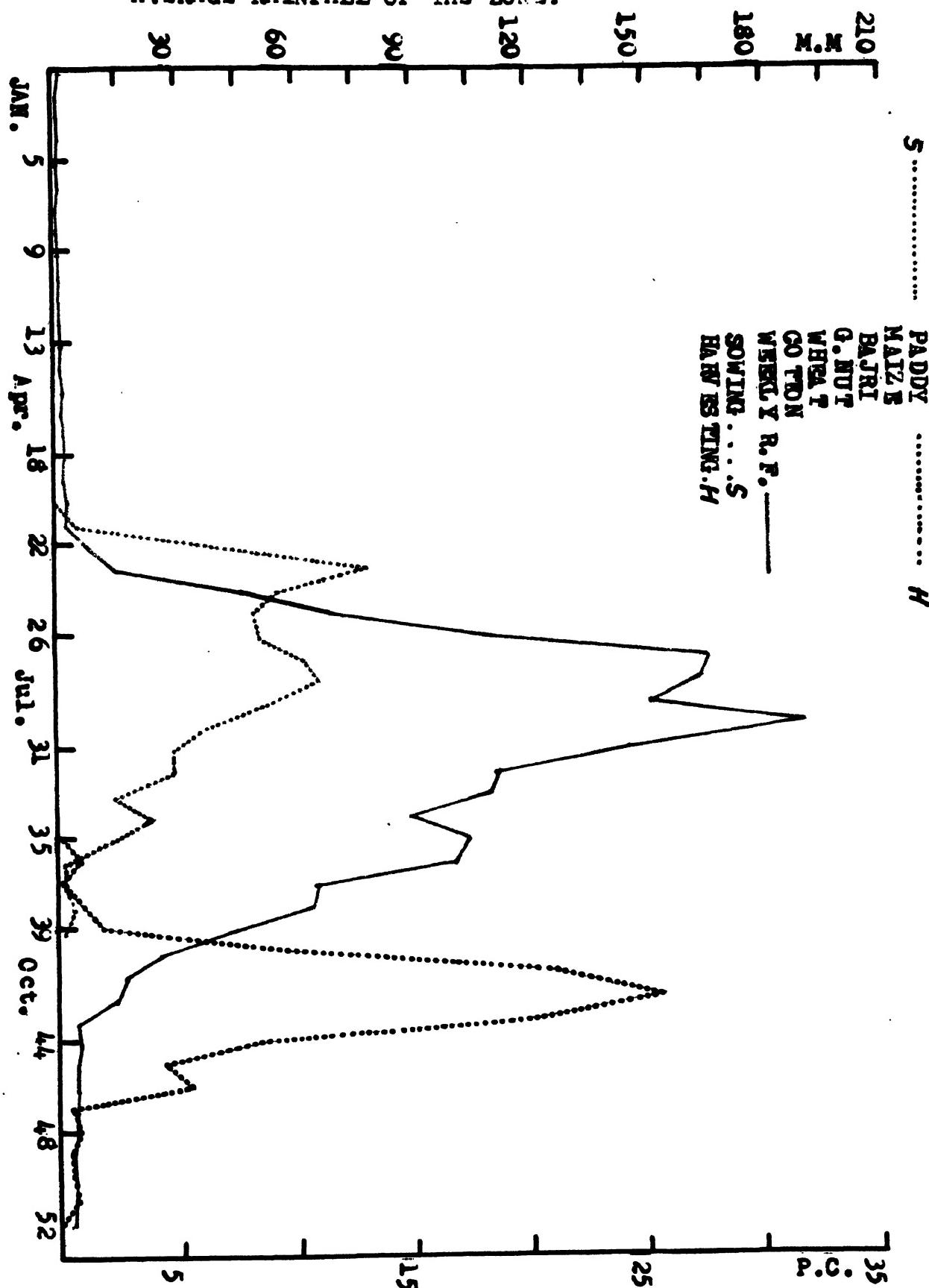
XI



B 03

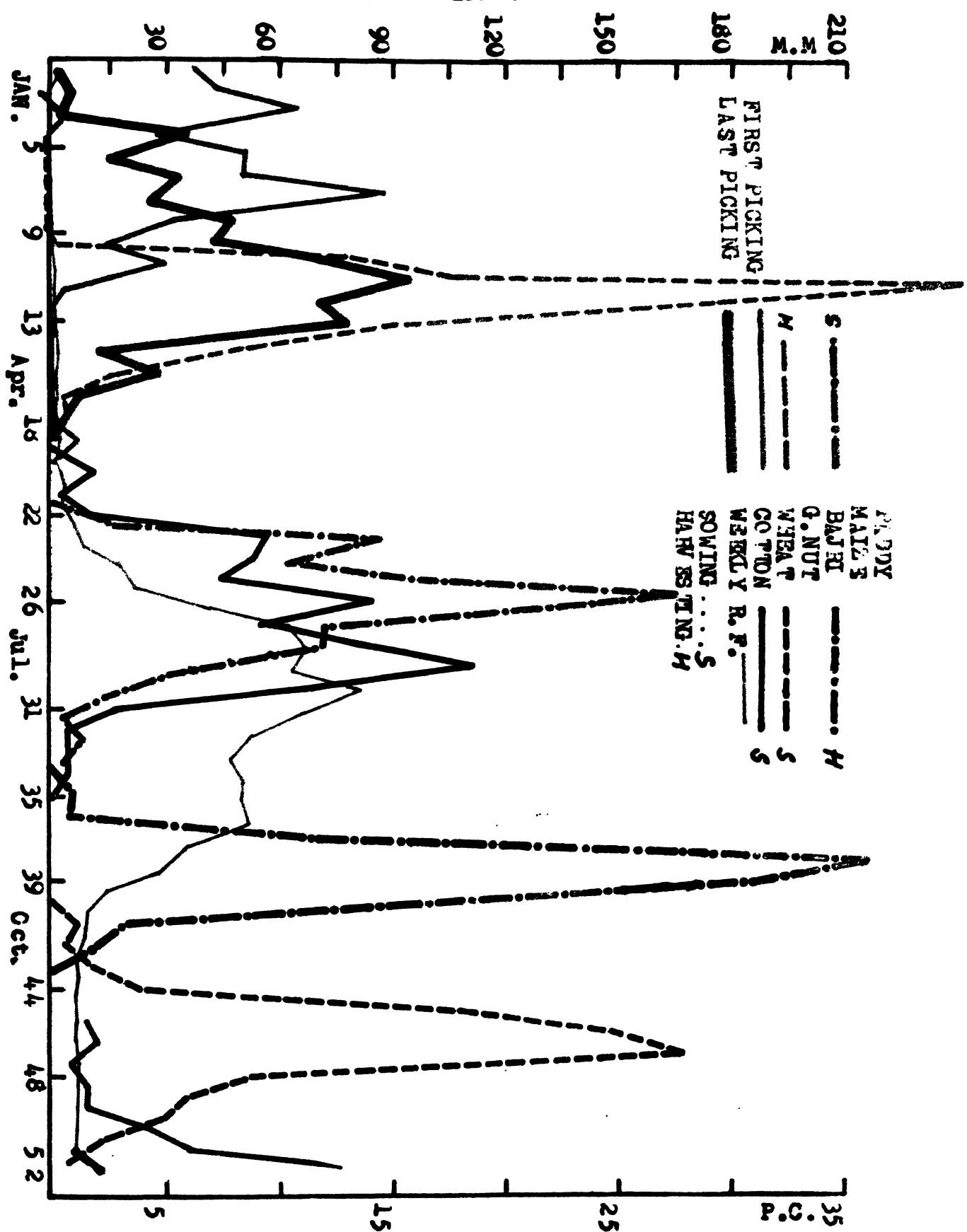
ZONE III RESIDUAL SOIL-PADDY ZONE.
 GRAPH SHOWING WEEKWISE SOWING, HARVESTING OF
 PREDOMINANT CROPS OF THE ZONE, ALONG WITH
 AVERAGE RAINFALL OF THE ZONE.

XII



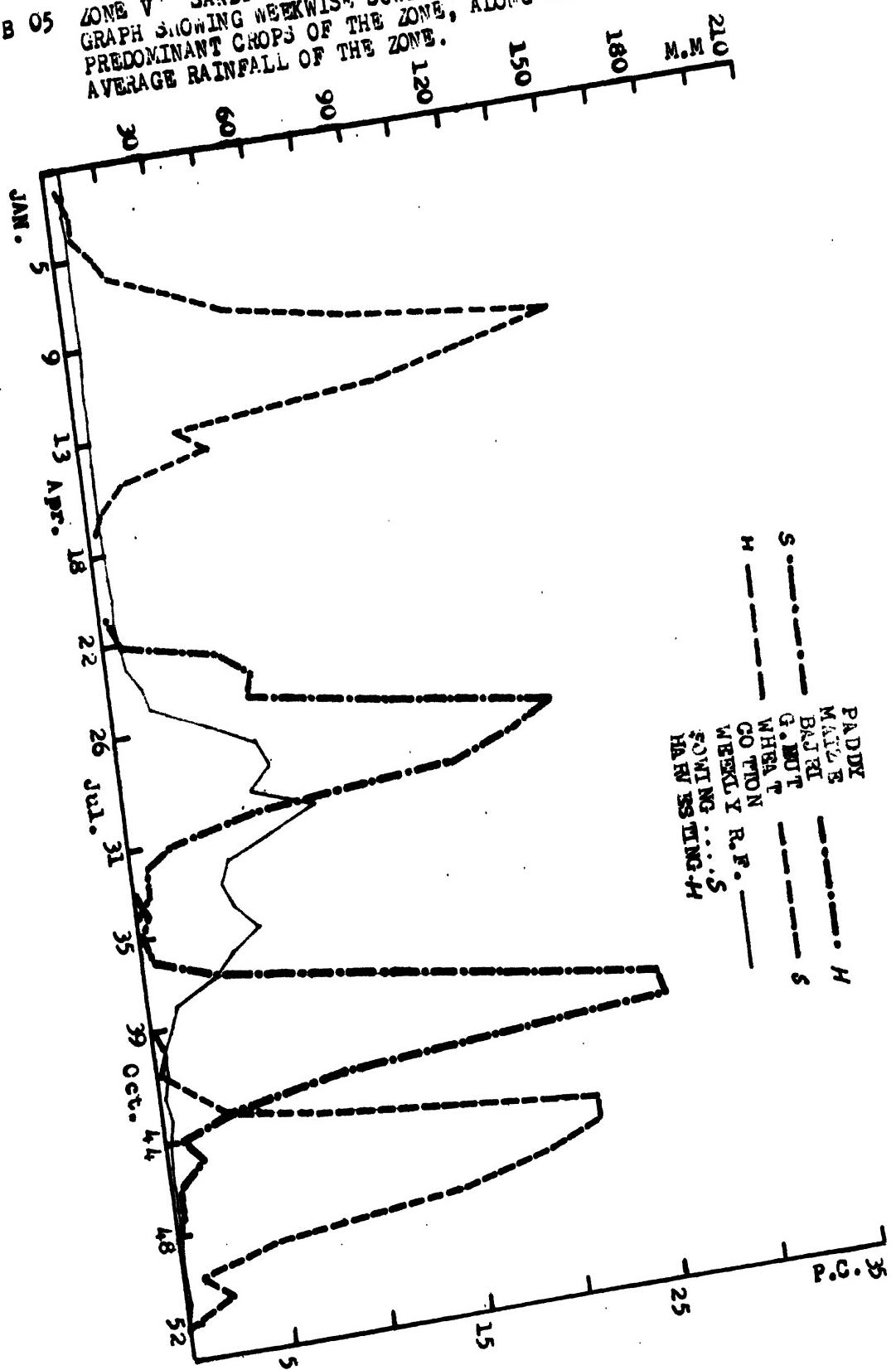
B 04 ZONE IV DEEP BLACK SOIL-COTTON ZONE.
 GRAPH SHOWING WEEKWISE SOWING, HARVESTING OF
 PREDOMINANT CROPS OF THE ZONE, ALONG WITH
 AVERAGE RAINFALL OF THE ZONE.

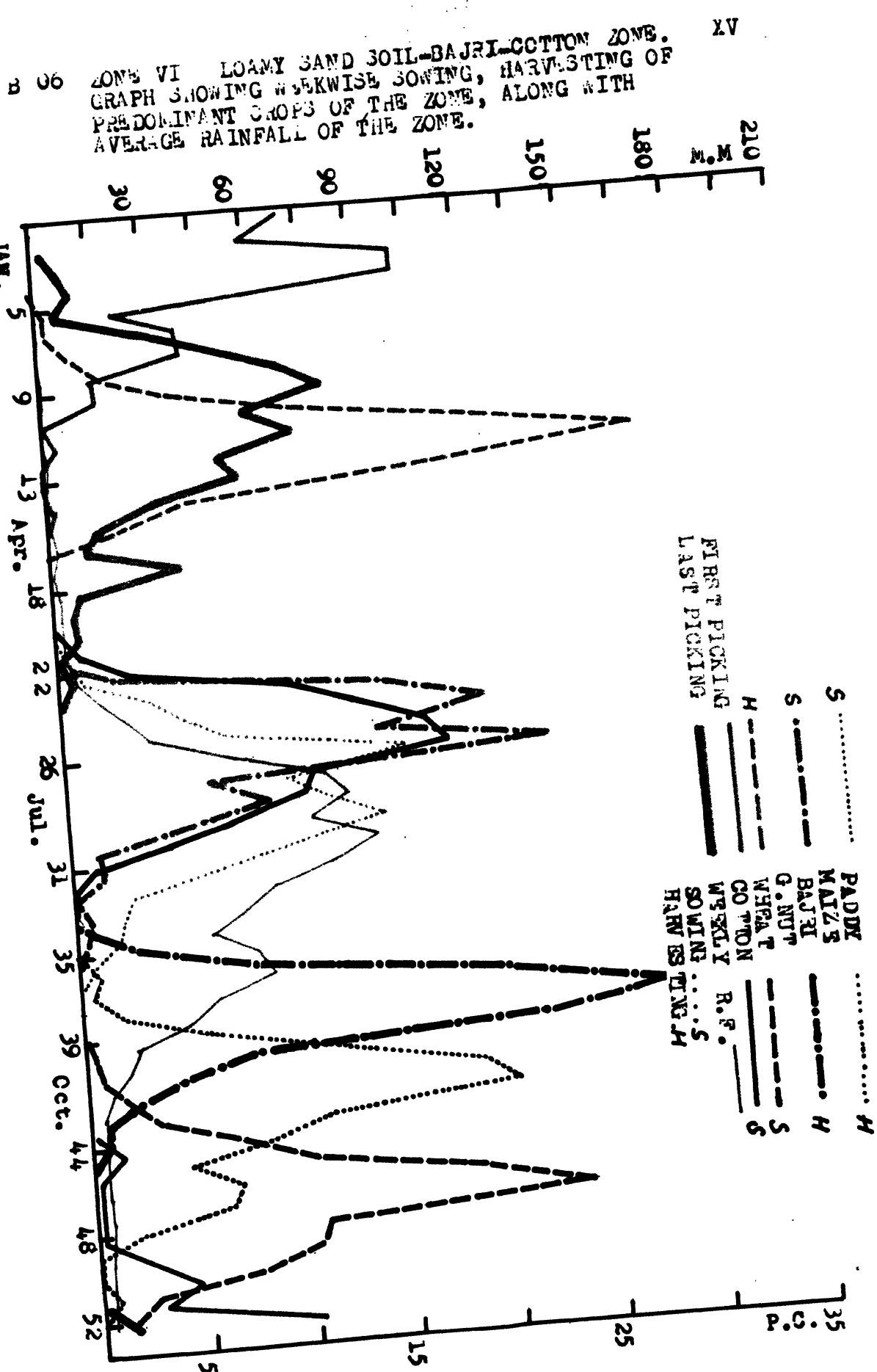
XIII



B 05 ZONE V. SANDY LOAM SOIL-BAJRI-TOBACCO ZONE.
 GRAPH SHOWING WEEKWISE SOWING, HARVESTING OF
 PREDOMINANT CROPS OF THE ZONE, ALONG WITH
 AVERAGE RAINFALL OF THE ZONE.

XIV

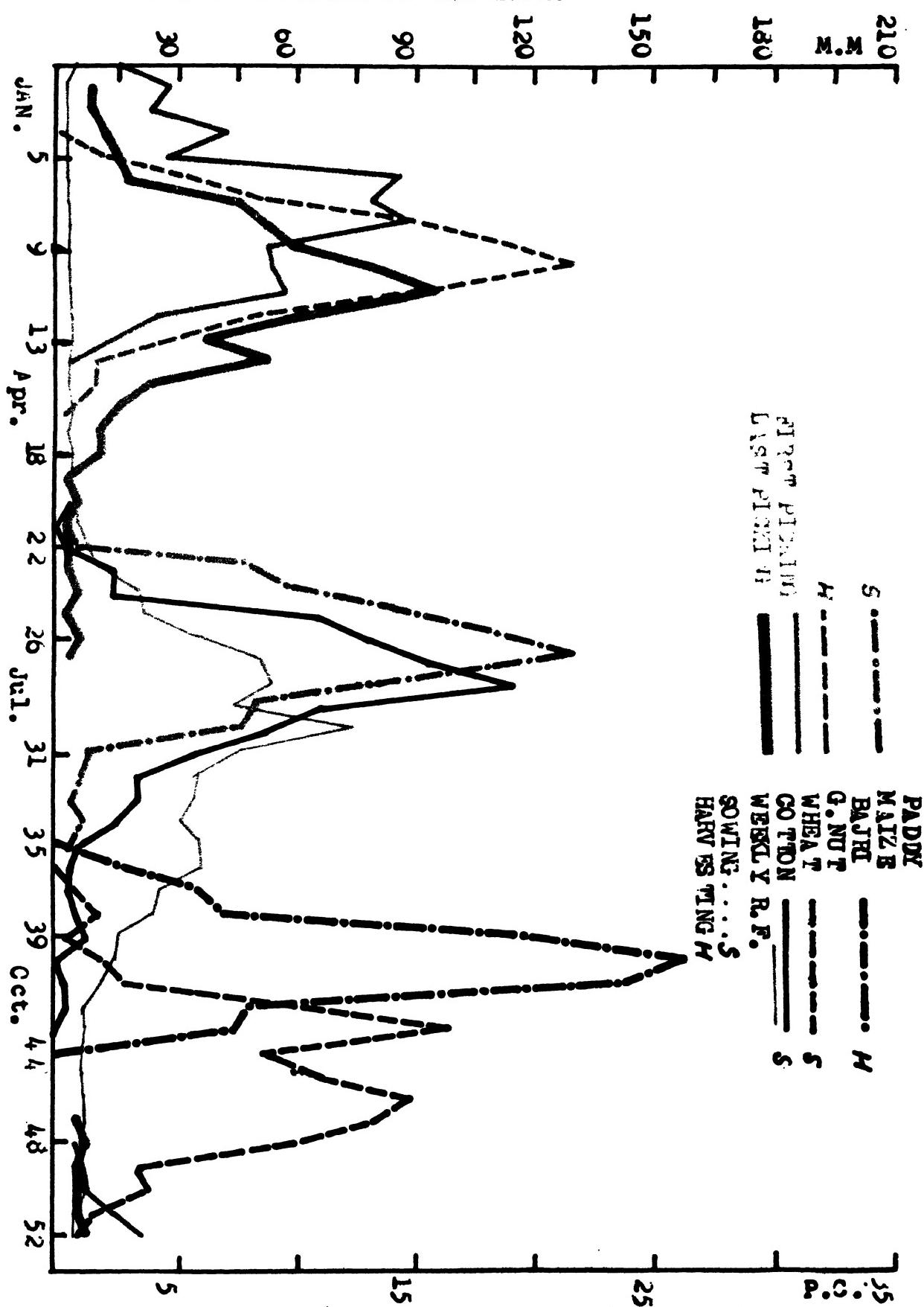




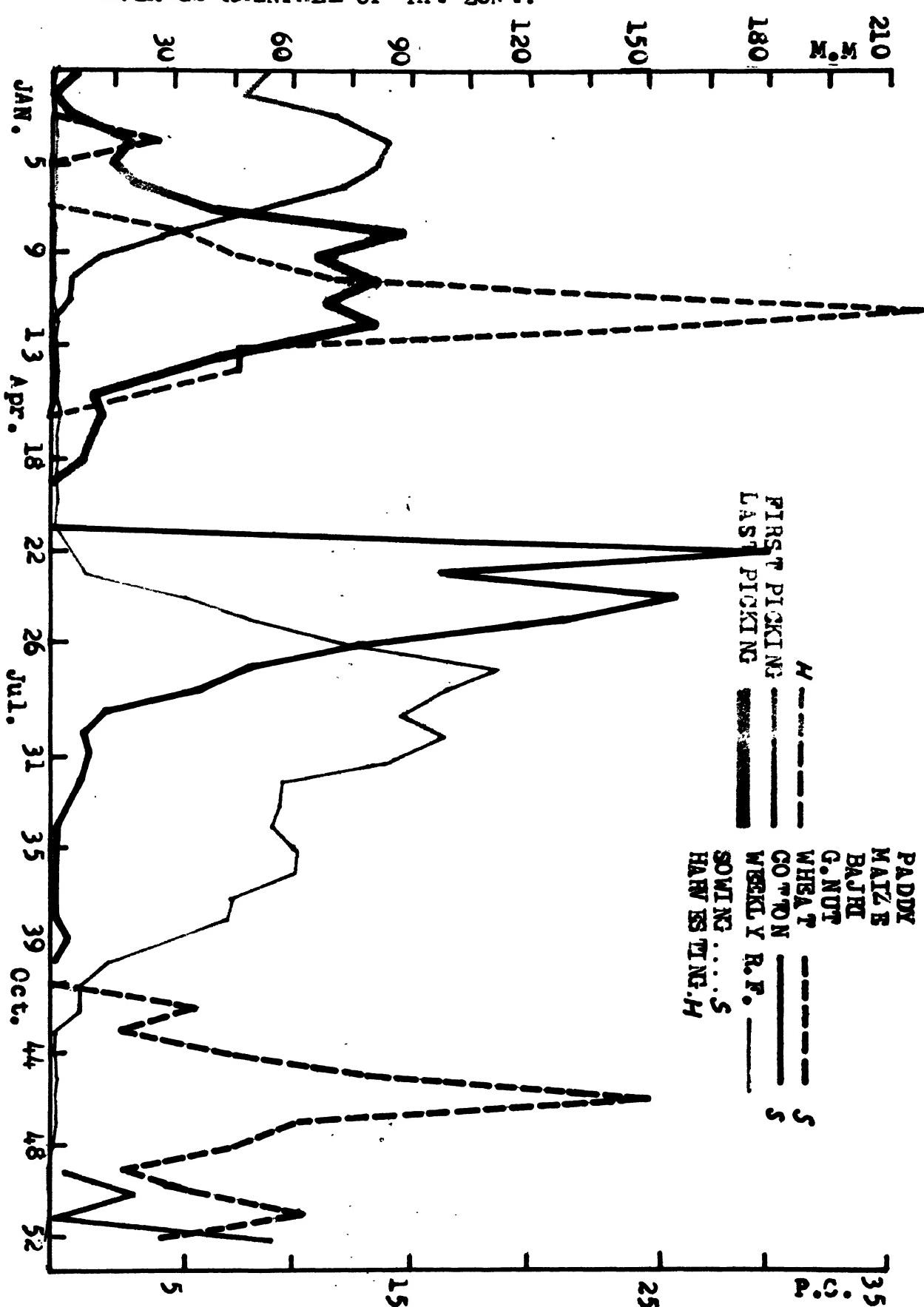
8 57

ZONE VII SANDY SOIL-BAJRI-PULSES ZONE.
GRAPH SHOWING WEEKLY SOWING, HARVESTING OF
PREDOMINANT CROPS OF THE ZONE, ALONG WITH
AVERAGE RAINFALL OF THE ZONE.

XVI

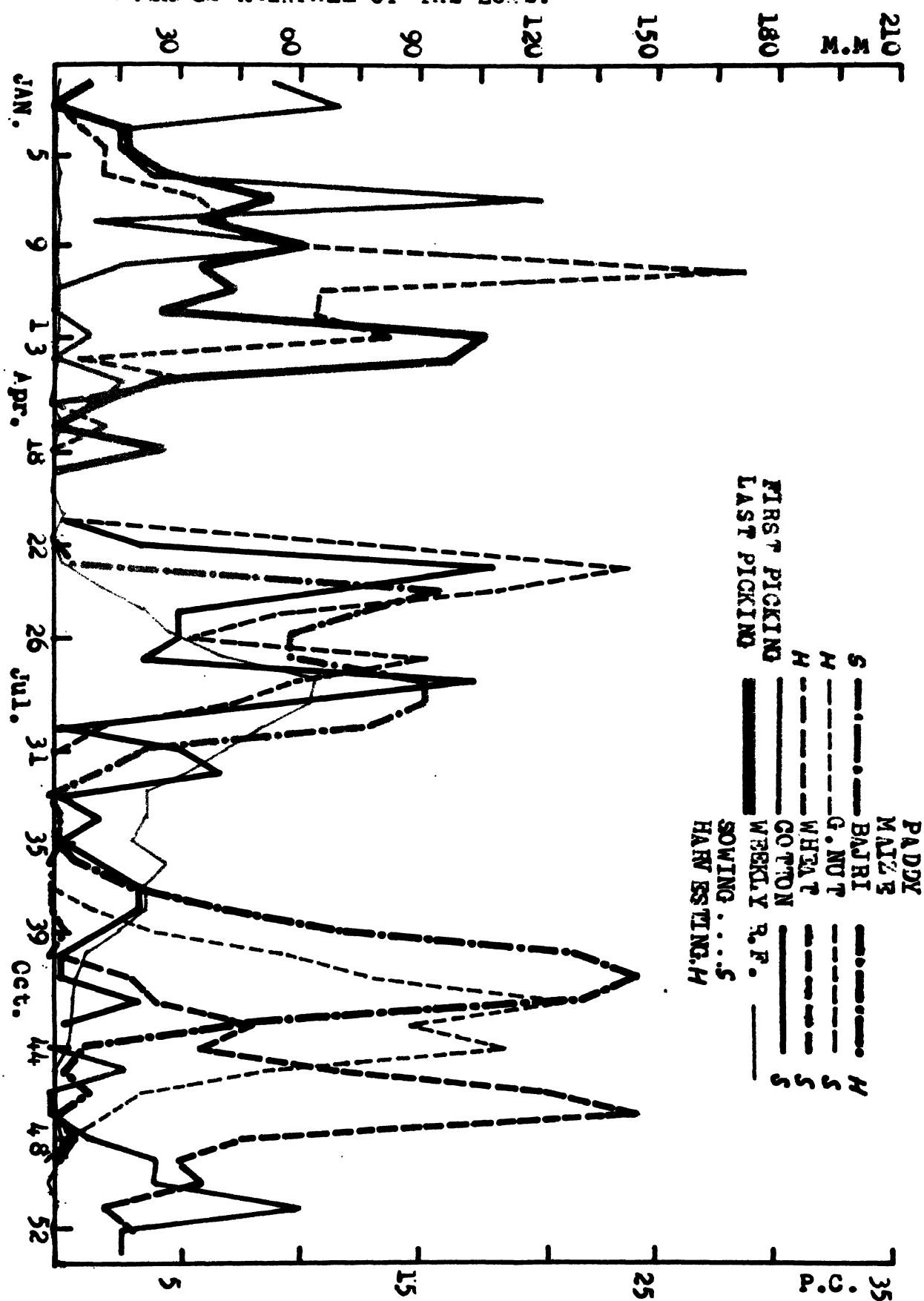


B 08 ZONE VIII CLAY ALLUVIAL SOIL-COTTON/DRY WHEAT ZONE.
 GRAPH SHOWING WEEKWISE SOWING, HARVESTING OF
 PREDOMINANT CROPS OF THE ZONE, ALONG WITH
 AVERAGE RAINFAL OF TH ZONE.

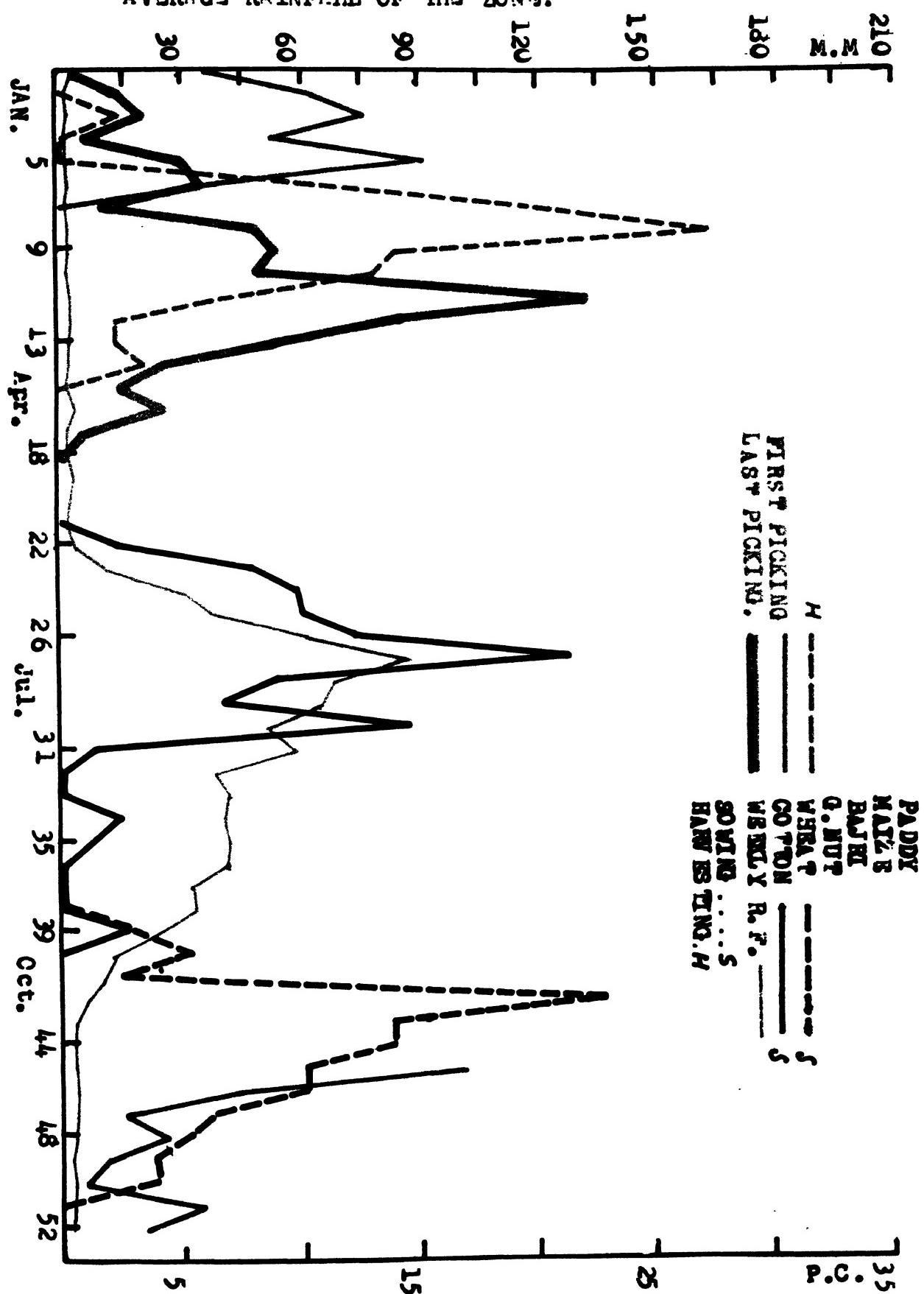


B '09 ZONE IX RESIDUAL SOIL-GROUNDNUT ZONE.
GRAPH SHOWING WEEKLY SOWING, HARVESTING OF
PREDOMINANT CROPS OF THE ZONE, ALONG WITH
AVERAGE RAINFAL OF THE ZONE.

XVIII

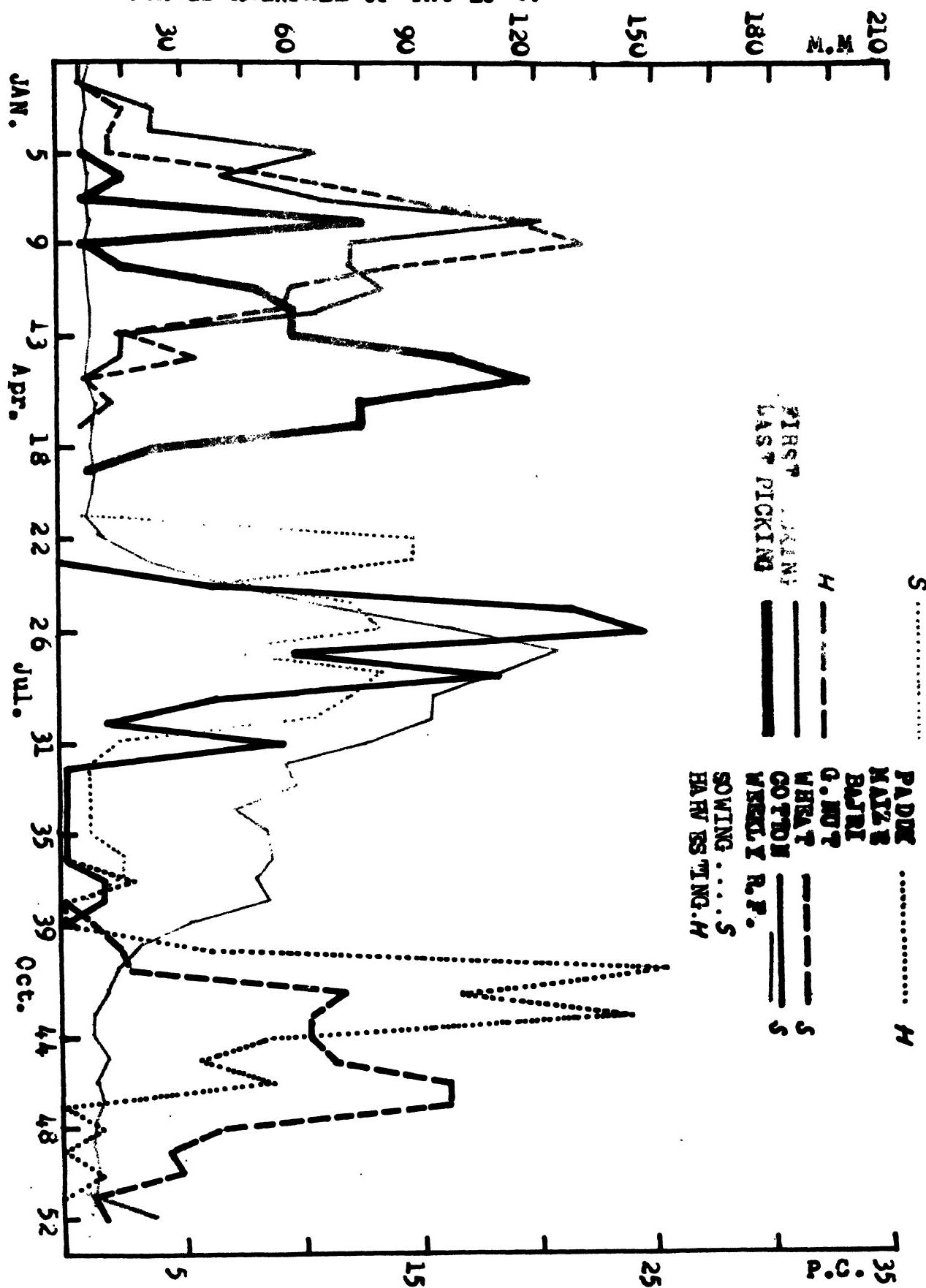


B NO ZONE X LITTORAL SOIL-COTTON/DRY WHEAT ZONE. XIX
 GRAPH SHOWING WEEKWISE SOWING? HARVESTING OF
 PREDOMINANT CROPS OF THE ZONE, ALONG WITH
 AVERAGE RAINFALL OF THE ZONE.

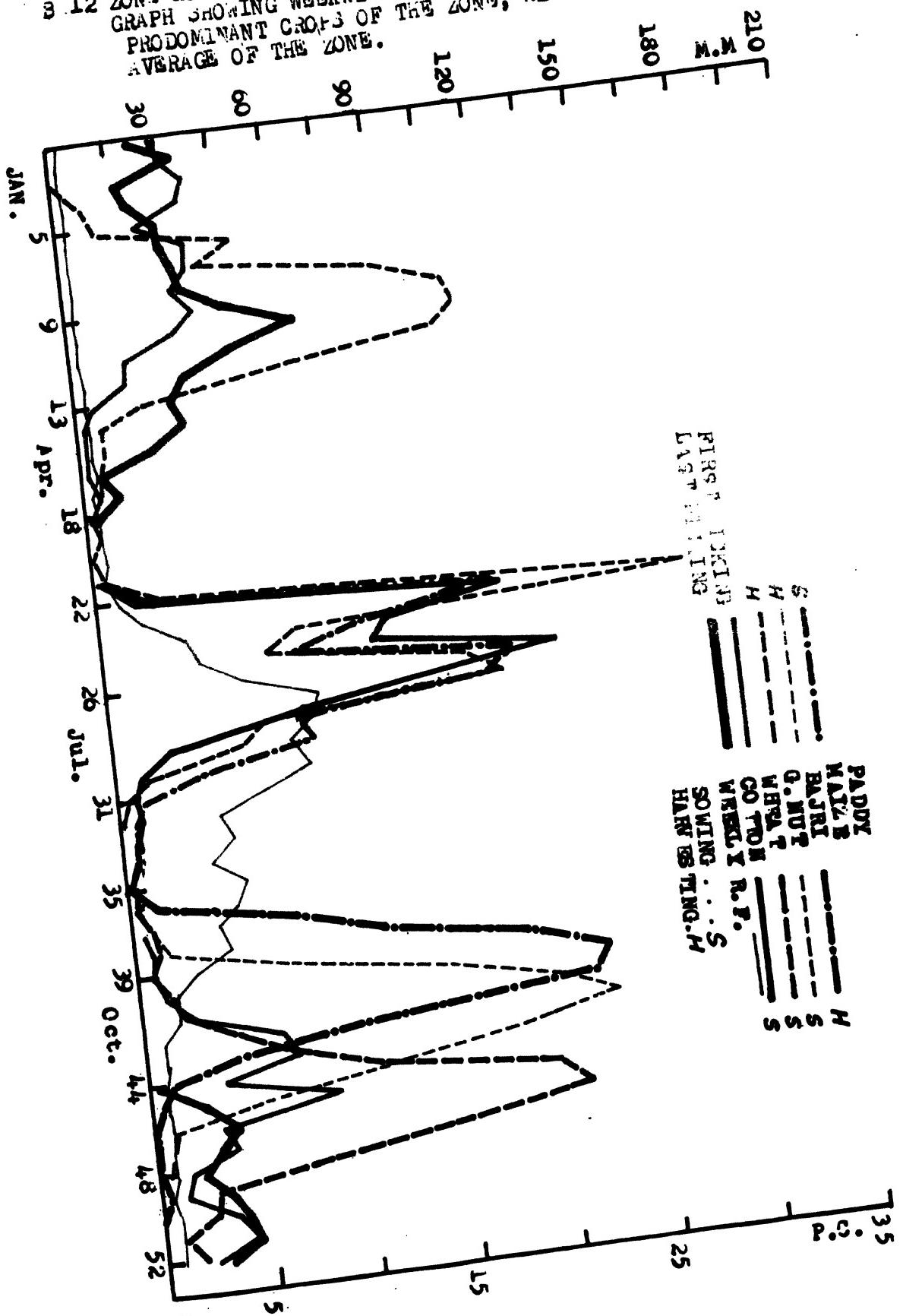


B 11 ZONE XI LITTORAL SOIL-PADDY-ZAL ZONE.
CHART SHOWING WEEKLY SOWING, HARVESTING OF
PREDOMINANT CROPS OF THE ZONE, ALONG WITH
AVERAGE RAINFALL OF THE ZONE.

xx



B. 12 ZONE AII LITTORAL SOIL-GROUNDNUT-BAJRI ZONE.
 GRAPH SHOWING WEEKWISE SOWING, HARVESTING OF
 PREDOMINANT CROPS OF THE ZONE, ALONG WITH
 AVERAGE OF THE ZONE.



XXII

Table 1.0

Rainfall, soil type, sowing and harvesting periods and crop pattern in Gujarat State.

1. a Weekly average rainfall of state.

(Rainfall in mm.)

Name	Weeks from 30th April to 4th November.												
	18 May	19	20	21	22	23	24	25	26	27	28 July	29	30
Gujarat State.	0.7	0.6	1.7	1.0	4.9	9.8	23.0	29.5	50.1	75.0	74.7	65.2	82.7

Name	Weeks from 30th April to 4th November.													
	31 August	32	33	34	35	36	37 September	38	39	40	41 October	42	43	44
Gujarat State.	66.0	46.4	44.6	41.0	43.3	46.2	33.8	29.5	17.5	9.2	6.8	3.4	2.0	1.2

1. b Monthly average rainfall of state.

(Rainfall in mm.)

Name	Jan	Feb	Mar-Apr	May	June	July	August	Sept	Oct-Dec	Nov	Dec-Febr.	Mean	
	ch.	ii.							ember	ber.	ember.	Annual.	
Gujarat State.	2.1	1.5	1.8	1.8	5.9	105.3	324.9	209.5	141.8	20.8	5.4	1.3	820.8

1. c Frequency distribution of annual rainfall reliability.

No. of Rainguage stations.

C.V.	10	11.20	21.30	31.40	41.50	51.60	61.70	71.80	81.90	91.100	>100
No. of Station	-	-	2	40	37	12	3	3	-	1	1

1. d Textural classification of soils.

(Figures in % of Soil samples).

Total Samples.	Sandy Clay Loam	Sandy Loamy Clay Loam	Sandy Loam	Sand Clay	Silt Loam	Silt Clay	Silt Clay Loam	Silky Clay	Silky Clay Loam	Silky Loam			
State	5630	5.9	23.6	12.4	21.8	9.7	14.8	7.4	-	0.7	1.8	0.6	1.3

XIXI

:- 2 :-

1. E Percentage fields of crops sown in different weeks.

No. of weeks.

Crops	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	April						May					June			July	
Bajri.	-	-	-	-	-	-	-	1.4	13.2	11.7	11.0	17.9	15.9	12.6		
Groundnut..	-	-	-	-	0.1	-	0.3	2.9	21.0	13.1	12.5	17.1	14.9	8.6		
Cotton.	-	-	-	-	-	-	0.1	0.3	1.8	12.2	13.1	13.8	15.5	11.8	11.0	
Maize.	0.3	-	-	0.3	0.1	0.1	0.1	2.8	19.1	16.4	16.3	17.0	10.8	8.8		
Wheat.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

1.E (Contd.)

No. of weeks.

Crops.	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
	July														October.
Bajri.	10.1	4.1	1.1	0.4	0.3	0.2	0.1	-	-	-	-	-	-	-	-
Groundnut.	6.1	2.6	0.3	0.2	0.2	-	-	0.1	0.1	-	-	-	-	-	-
Cotton.	6.5	4.2	2.5	1.7	1.0	1.1	0.5	0.5	0.5	0.6	0.6	0.1	0.1	0.2	-
Maize.	4.8	1.6	0.4	-	-	0.1	-	-	-	-	-	-	-	-	-
Wheat.	-	-	-	-	-	-	-	0.3	0.5	0.2	1.0	1.6	5.0	7.1	

1.E (Contd.)

No. of week.

Crops	44	45	46	47	48	49	50	51	52				2	3	4
	November						December						January		
Bajri.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundnut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cotton.	-	0.1	0.1	-	-	0.1	-	-	-	-	-	-	-	-	-
Maize.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat.	8.9	16.6	19.3	1.9	4.4	4.1	2.0	1.2	0.2	-	-	-	-	-	-
				17.6											

XXIII (A)

- 3 -

1.f Percentage fields of crops harvested in different weeks.

Crops	No. of weeks.													
	33 August	34	35	36	37 September	38	39	40	41 October	42	43	44	45 November	46
Bajri.	0.1	-	0.4	1.8	7.7	15.7	19.8	10.5	17.9	9.9	4.1	0.7	0.6	0.4
Groundnut	-	-	-	-	0.3	1.1	3.7	7.7	12.5	16.2	19.6	14.1	10.2	7.2
Cotton 1st picking.	-	-	-	-	-	0.1	-	0.2	0.3	1.0	1.1	1.3	1.5	1.5
Cotton last picking.	-	-	-	-	-	-	-	-	-	-	-	0.3	0.5	
Maize.	0.4	0.4	1.7	6.0	13.3	24.2	22.2	14.3	8.0	6.7	1.7	0.8	-	0.4
Wheat.	-	-	-	-	-	-	-	-	-	-	-	-	-	
Paddy.	0.1	0.1	-	0.3	0.2	1.6	4.6	13.0	21.7	20.4	14.7	6.7	5.3	5.1

1.f (Contd.)

	No. of weeks.													
	47 Nov.	48	49	50	51	52	1 December	2	3	4	5	6	7	8 February
Bajri.	0.2	0.1	-	-	-	-	-	-	0.1	-	-	-	-	
Groundnut	3.0	1.8	0.7	0.4	0.7	0.3	0.1	0.1	0.1	-	-	-	-	0.1
Cotton 1st Picking.	0.6	0.7	1.4	1.1	3.5	3.7	6.3	7.7	6.8	10.4	8.4	6.4	7.8	7.6
Cotton Last Picking.	0.4	0.3	0.5	0.5	0.6	0.8	1.1	1.6	2.3	3.4	3.3	5.0	6.6	9.7
Maize.	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Wheat.	-	-	-	-	-	-	-	0.3	0.4	1.1	4.2	5.3	10.1	
Paddy.	3.8	1.5	0.3	0.2	0.3	0.1	-	-	-	-	-	-	-	

1.f (Contd.)

	No. of weeks.												
	9 March	10	11	12	13	14	15 April	16	17	18	19	20	21
Bajri.	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundnut.	0.1	-	-	-	-	-	-	-	-	-	-	-	-
Cotton 1st Picking.	4.6	3.9	3.4	1.6	0.7	0.4	0.2	0.3	-	0.2	-	0.1	-

XXIII (B)

-: 4 :-

No. of weeks.

Crops	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	March				April				May					
Cotton														
Last Picking.	9.9	10.8	12.2	9.1	6.6	5.2	3.7	2.2	2.1	0.9	0.1	0.2	0.1	-
Maize.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wheat.	13.8	18.5	18.3	15.4	6.9	3.7	1.5	0.4	0.1	-	-	-	-	-
Paddy.	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1.g Percentage of net sown area under groups of crops in Gujarat State.

Group A B C D G.S.A. Irri.

Name

Gujarat State. 72.1 20.7 9.0 5.1 106.9 11.5

Type 20

Weekly average rainfall of zones. (Rainfall in M.M.)

Sr.	Zone No.	Name of zone.	No. of avg. cent. year.	No. of cent. year.	Mean annual																												
					May	June	July	August	September	October	November	December	January	February	March																		
1.	Zone I.	Soil - Maize.	60.3	7	0.5	0.7	1.5	1.2	12.9	9.8	30.0	33.6	65.1	89.7	83.5	108.3	89.2	63.3	98.9	56.6	88.7	63.6	49.5	40.3	27.0	11.5	9.0	4.9	1.8	1.9	1104.9		
2.	Zone II.	Residual soil - Cotton	60.3	7	0.5	0.7	1.5	1.2	12.9	9.8	30.0	33.6	65.1	89.7	83.5	108.3	89.2	63.3	98.9	56.6	88.7	63.6	49.5	40.3	27.0	11.5	9.0	4.9	1.8	1.9	1104.9		
3.	Zone III.	Soil - Paddy.	44.4	6	0.8	0.8	2.0	2.2	7.1	14.4	46.6	70.2	109.6	163.3	151.1	189.7	146.2	110.2	104.0	101.3	64.8	63.5	43.8	24.6	15.2	12.1	2.5	3.0	1675.9				
4.	Zone IV.	Deep Blacksoil to ton.	53.7	11	0.8	0.5	1.1	1.0	5.3	12.0	34.3	50.1	75.5	112.5	98.6	88.3	98.8	85.5	58.8	57.6	65.6	69	62.8	61.5	45.1	44.3	27.7	13.7	8.8	2.2	1.9	1.7	1146.5
5.	Zone V.	Sandy loam soil Bajri - Bhabar	45.3	16	0.8	0.5	0.8	0.4	4.5	10.5	18.3	24.1	48.0	73.1	79.0	88.2	86.5	74.8	66.0	47.3	36.6	49.1	53.8	38.6	28.7	14.3	10.6	5.0	1.7	1.5	1.0	840.1	
6.	Zone VI.	Loamy sand soil - Bajri - Goitron	56.5	6	1.0	0.6	2.3	0.9	3.9	6.2	16.0	20-0	39.2	60.6	65.9	61	379.4	64.2	48.8	43.1	46.6	47.1	48.4	31.5	24.7	9.2	4.0	3.2	0.6	1.1	0.6	725.0	
7.	Zone VII.	Sandy soil Bajri - Pulses.	64.6	10	0.5	0.4	2.2	0.8	2.2	3.5	7.2	9.1	25.5	40.8	43.6	37.9	66.9	42.4	27.1	25.9	28.1	34.2	26.1	19.5	7.7	5.3	2.6	2.2	0.6	2.5	0.4	483.7	
8.	Zone VIII.	Clay alluvial soil - cotton/dry wheat.	64.9	12	0.8	0.7	2.1	1.4	3.9	8.8	16.9	18.6	32.1	47.7	50.6	41.1	69.9	42.8	31.7	30.0	27.0	31.9	32.3	21.9	18.1	11.4	10.1	6.1	2.3	1.6	0.6	870.4	
9.	Zone IX.	Residual soil - groundnut.	61.1	9	0.4	0.8	2.7	1.2	3.6	9.6	11.5	22.8	33.9	53.3	63.6	44.3	51.4	36.8	24.6	26.7	25.9	28.9	26.6	19.0	20.4	11.6	7.6	6.6	2.3	8.2	1.0	663.0	
10.	Zone X.	Litteral soil - cotton/ dry wheat.	68.7	6	0.2	0.7	1.1	0.3	2.9	10.5	29.3	36.2	41.1	48.1	57.8	35.3	41.0	30.1	41.1	40.4	31.8	32.0	23.8	12.2	9.2	4.8	2.4	2.2	1.1	1.1	0.7	1089.1	
11.	Zone XI.	Litteral soil - Paddy.	69.0	1	0.5	1.2	1.1	0.3	5.3	15.8	35.8	67.9	94.2	120.6	102.9	88.1	87.6	71.9	60.9	58.6	37.3	45.1	46.8	42.2	45.3	24.9	14.4	6.9	5.6	1.6	0.7	553.8	
12.	Zone XII.	Litteral soil - Groundnut - Bajri.	67.3	5	0.1	1.1	2.2	0.8	1.6	11.6	22.9	29.1	41.8	64.3	63.6	41.8	43.8	38.8	23.0	22.2	20.7	27.3	20.6	20.7	11.2	8.0	5.6	4.9	2.5	0.7	4.9	0.7	553.8

一〇九

59.6 97 0.7 0.6 1.7 1.0 4.9 9.8 23.0 29.6 80.1 76.0 74.1

46

Table - 4

Monthly average rainfall of zones.

(Rainfall in M.M.)

Mean

Sr. No.	Zone No.	Name of the zone	No. of av. year.	No. of centres.	January	February	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Annual
---------	----------	------------------	---------------------	--------------------	---------	----------	-------	-------	-----	------	------	--------	-------	------	------	------	--------

1.	Zone I.	Residual soil - Maize.	61.8	10	2.3	1.5	2.6	1.2	6.5	105.0	363.4	278.1	178.7	19.0	4.8	1.4	965.6
2.	Zone II.	Residual soil - Cotton	60.3	7	2.3	1.0	1.6	1.3	6.8	133.4	422.0	296.3	202.3	28.3	7.7	1.8	1104.9
3.	Zone III.	Residual soil - Paddy	44.4	5	2.5	0.9	1.9	2.5	8.8	207.8	674.9	436.4	280.9	47.0	10.0	2.4	1055.9
4.	Zone IV.	Deep black soil - Cotton.	53.7	11	2.5	1.3	1.4	1.7	6.1	156.7	449.2	276.5	202.9	33.7	8.0	1.4	1146.6
5.	Zone V.	Sandy loam soil - Bajri - Tobacco	45.3	16	1.9	1.3	1.9	1.6	4.3	91.1	334.6	225.8	156.1	15.4	4.3	0.8	840.1
6.	Zone VI.	Loamy sand soil - Bajri - Cotton.	56.5	6	2.4	1.5	1.8	0.9	5.8	74.6	283.9	207.8	133.8	8.0	3.1	0.6	725.0
7.	Zone VII.	Sandy soil - Bajri - pulses.	64.6	10	1.9	2.7	1.8	0.8	4.5	38.9	188.4	131.5	66.9	8.2	1.8	1.4	458.7
8.	Zone VIII.	Clay alluvial soil - Cotton / dry wheat.	64.9	12	1.3	0.9	1.4	1.6	6.7	71.9	228.6	140.6	94.4	13.1	4.2	1.1	570.4
9.	Zone IX.	Residual soil - Groundnut.	60.0	8	0.9	1.3	2.1	2.7	6.7	85.1	228.0	121.7	79.6	18.1	4.8	1.2	553.0
10.	Zone X.	Litteral soil - cotton / dry wheat.	68.7	6	2.6	1.1	1.1	2.6	3.7	126.8	311.6	186.9	140.2	30.6	7.3	1.4	915.1
11.	Zone XI.	Litteral soil - Paddy	68.0	1	2.4	1.9	1.1	2.9	6.1	197.6	436.2	225.4	174.2	20.3	10.7	2.4	1089.1
12.	Zone XII.	Litteral soil - Groundnut / Bajri.	66.0	5	1.6	2.0	2.1	1.9	4.9	97.1	241.3	110.3	71.5	19.7	4.5	1.4	585.6
	States:		59.6	98	2.1	1.5	1.8	1.8	5.9	105.3	324.9	200.6	141.8	20.8	5.4	1.3	820.8

Frequency distribution of annual rainfall reliability. (Figures in parenthesis indicate percentages)

Sr. No.	Zone No.	< 10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	> 100	G.V.
												No. of language stations	
1.	Zone Residual soil I. Maize	-	-	-	-	4	2	2	-	-	1	1	31.74
2.	Zone Residual soil II. Cotton.	-	-	3	1	2	-	-	-	-	-	-	30.28
3.	Zone Residual soil III. Paddy.	-	-	2	2	-	-	-	-	-	-	-	26.50
4.	Zone Deep black soil IV. Cotton.	-	-	9	2	-	-	-	-	-	-	A 32.59 B 31.25	
5.	Zone Sandy loam soil Bajri tobacco.	-	-	8	7	-	-	1	-	-	-	-	A 40.88 B 44.29
6.	Zone Loamy sand soil VI. Bajri-Cotton	-	-	-	4	-	-	-	-	-	-	-	A 42.32 B 40.51
7.	Zone Sandy soil VII. Bajri-Pulses.	-	-	1	2	4	3	-	-	-	-	-	A 54.97 B 47.38
8.	Zone Clay alluvial soil VIII. Cotton/Dry wheat.	-	-	2	8	1	-	-	-	-	-	-	A 43.96 B 35.04
9.	Zone Red dual soil IX. Groundnut.	-	-	5	7	2	1	-	-	-	-	-	A 41.11 B 34.62 C 40.99
10.	Zone Littoral soil X. cotton/dry wheat	-	-	4	2	-	-	-	-	-	-	-	36.66
11.	Zone Littoral soil XI. Paddy-Wal.	-	-	1	-	-	-	-	-	-	-	-	
12.	Zone Littoral soil XII. Groundnut-Bajri.	-	-	1	2	1	-	1	-	-	-	-	47.65
	States:-	(2)	40	37	12	3	3	#	1	1	(1)	(1)	

A = indicates northern part of zone; B & C = indicates southern parts of the zone.

Table - 3.C

Sr. No.	Zone Name of zone	No. of samples	Textural classification of soil of zones (Figures in % of soil samples)											
			Sandy	Clay	Loam	Sandy loam	Sand	Loamy clay	Silt	Silt clay	Silty loam			
1. Zone I.	Residual soil - Malo.	538	6.0	4.3	14.4	39.5	15.0	8.9	11.0	-	1.3	0.4	0.2	
2. Zone II.	Residual soil - Cotton.	288	-	42.0	5.9	12.5	5.6	11.8	12.1	-	4.9	1.4	3.5	0.3
3. Zone III.	Residual soil - Paddy.	1036	3.5	19.8	20.0	20.4	12.4	12.9	0.6	-	0.6	0.5	0.3	-
4. Zone IV.	Deep black soil - Cotton.	1341	5.8	28.4	11.2	13.9	9.6	28.9	1.5	-	0.1	0.4	0.1	0.1
5. Zone V.	Sandy loam soil Bajri-Babco	292	3.4	3.4	16.1	51.7	5.6	9.6	8.2	0.4	0.4	0.7	0.3	0.3
6. Zone VI.	Loamy sandy soil Bajri-Cotton.	283	14.8	-	3.9	61.8	13.4	1.4	4.2	-	-	0.4	-	-
7. Zone VII.	Sandy soil - Bajri-Pulses.	472	25.2	1.3	3.6	29.4	22.3	1.3	7.4	-	1.1	0.8	0.4	7.2
8. Zone VIII.	Clay alluvial soil Villi. Cotton/Dry wheat.	296	4.0	14.2	4.4	19.3	6.4	6.8	32.8	-	-	10.1	-	2.0
9. Zone IX.	Residual soil - Groundnut.	835	0.1	60.9	6.8	4.8	1.3	16.5	12.1	-	0.8	4.6	0.5	1.6
10. Zone X.	Litteral soil Cotton/Dry wheat.	22	-	72.7	4.6	-	-	-	-	-	-	22.7	-	
11. Zone XI.	Litteral soil - Paddy-Mal.	23	4.3	52.3	-	4.3	-	17.4	-	4.3	4.3	-	13.1	-
12. Zone XII.	Litteral soil - Groundnut-Bajri	205	-	42.4	6.8	7.8	1.5	16.1	12.7	-	0.5	3.4	0.5	8.3
State:		5630	5.9	23.6	12.4	21.8	9.7	14.8	7.4	-	0.7	1.8	0.6	1.3

MAXX

Table 4a0

Percentage of fields of *Dajra* sown in different weeks in some zones.

Crop : Bajra

Sr. Zone No.	Name of Zone.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
1. Zone V	Sandy Loam Soil Bajri- Tobacco.	3.0	15.3	19.9	14.7	22.6	6.6	9.2	5.5	1.1	1.4	0.5	0.3			
2. Zone VI	Loamy Sand Soil Bajri/ Cotton.	2.4	13.9	9.2	16.0	27.4	11.7	11.5	4.8	1.8	-	0.6	-	-		
3. Zone VII	Sandy Soil Bajri Pulses.	0.4	5.3	6.8	6.6	13.6	21.6	19.8	16.6	6.4	2.0	0.5	0.4	-		
4. Zone VIII	Clay Alluvial Soil Cotton/ Dry wheat.	7.4	9.2	13.7	17.6	21.1	14.8	7.7	7.0	0.7	0.4	-	0.4			
5. Zone IX	Residual soil 0.1 Groundnut.	2.0	17.4	11.9	8.7	19.3	17.9	8.6	9.3	3.7	0.7	0.2	0.2	-		
6. Zone XII	Loamy soil. Soil Groundnut-Bajri.	0.8	16.0	12.8	9.9	9.9	15.3	15.5	13.0	4.0	2.0	-	0.2	0.2	0.4	

For identification of see annexure I list of standard weeks.

Table 4.0(A)

Percentage of fields of Bajra harvested in different weeks in some zones.

Crop : Bajra.

W B E K N O .

Figures in %
Average Triennium ending 1971-72.

XXX

For identification of see annexure _____ list of standard weeks.

5. Zone IX	Residual Soil Groundnut	-	-	1.3	7.7	11.7	19.3	22.9	19.6	11.6	4.5	1.0	0.3	-	-	-	0.1
6. Zone XII	Litter Soil Groundnut-Bajra	-	-	0.7	2.9	6.8	11.9	21.6	24.3	21.9	7.3	0.9	0.2	1.1	-	0.4	-

Table 4A1.

Percentage of fields of Groundnut sown in different Figures in % weeks in some zones.

Crop: Groundnut.

Average Rainfall during 1971-72.

	W	E	E	K
Sowing				
Sr. No.	19	20	21	22
Sub-zone	23	24	25	26
	27	28	29	30
	31	32	33	34
	35	36		

1. Zone I	Residual Soil	1.6	9.5	18.9	20.0	21.9	8.4	5.5	3.4	0.8
Maize.										

2. Zone IX	Residual Soil	0.3	0.4	2.9	28.4	9.2	7.6	17.1	19.0	7.3	6.0	1.5	0.3
Groundnut.													

3. Zone XI	Littoral. Soil	8.6	23.8	18.3	9.0	5.5	15.2	9.8	7.0	1.6	-	0.4	0.4	-	- 0.4
Groundnut -	Bajrl.														

Table 4.1(A)

Percentage of fields of Groundnut harvested in different weeks in some zone.

Figures in %

Crop : Groundnut.

Average Tidal inundation during 1971-72.

W.E.K
Harvesting.
Sr. No. Sub-zone.

No. 37 38 39 40 41 42 43 44 45 46 47 48 49 50

1. Zone I Residual Soil Maize. 0.8 2.7 5.9 4.9 16.8 25.4 17.8 13.1 8.7 1.7 1.7 - 0.5

2. Zone IX Residual Soil Ground nut. 0.5 1.2 6.5 14.6 9.9 22.8 18.1 10.8 4.9 0.5 0.1 0.1

3. Zone XII Littoral soil Groundnut. Bajri. 1.6 4.3 9.8 13.4 21.2 15.0 18.9 8.7 3.9 2.4 0.8

Table 4.2

Percentage of fields of cotton sown in different weeks
in some zones.

Crop :- Cotton.

Figures in %
Average Trienium ending 1971-72

		W	E	B	K	W	O
Sr.	Zone No.	Sub-Zone.	26	21	22	23	24
			May		June		July
							August.
1.	Zone I	Residual Soil Maize.	0.6	2.6	19.7	23.2	16.2
2.	Zone II	Residual Soil Cotton.		1.4	25.4	18.3	25.3
3.	Zone IV	Deep Black Soil Cotton.		3.1	16.0	26.2	21.5
4.	Zone V	Sandy Loam Soil Bajri-Tobacco.	0.8	3.0	10.9	13.6	17.0
5.	Zone VI	Loamy Sand Soil Bajri-Cotton.	1.7	0.5	1.6	9.3	8.8
6.	Zone VIII	Clay Alluvial Soil-Cotton/Dry Wheat ^t .		0.2	2.2	2.2	10.6
7.	Zone IX	Residual Soil Groundnut ^t .	0.2	1.7	19.2	13.8	12.8
8.	Zone X	Littoral Soil Cotton/Dry Wheat		2.2	7.8	9.8	10.0
9.	Zone XI	Littoral Soil Paddy-wal	-	-	6.2	21.5	24.6
10.	Zone XII	Littoral Soil Groundnut Bajri.	3.3	18.0	10.0	4.9	4.9

Table 4.2 (Cont'd) Percentage of fields of Cotton sown in different figures in % Average Triennium ending 1971-72.

W E B K No.

Sowing.
Sr. Zone No. Sub zone. 34 35 ; 36 37 38 39 ; 40 41 42 43 ; 44 45
No. August September October November.

1. Zone I	Residual Soil Maize.	-	-	-	0.6	0.3	0.3	-	-	-	-	-
2. Zone II	Residual Soil Cotton.	-	-	-	-	-	-	-	-	-	-	-
3. Zone IV	Deep black Soil Cotton.	-	-	-	-	-	0.3	-	-	-	-	-
4. Zone V	Sandy Loam Soil Bajri-Tobacco.	0.4	-	-	-	-	-	-	-	-	-	-
5. Zone VI	Loamy Sand Soil Bajri-Cotton.	0.5	-	-	-	-	-	-	-	-	-	-
6. Zone VIII	Clay Alluvial soil Cotton/Dry Wheat.	2.2	0.9	0.5	0.5	0.7	1.1	-	0.2	0.2	-	-
7. Zone IX	Residual Soil Groundnut.	0.4	0.2	-	0.4	-	-	-	-	-	-	-
8. Zone X	Littoral Soil Cotton/Dry Wheat.	2.2	1.1	-	-	-	2.2	-	-	-	-	-
9. Zone XI	Littoral Soil Paddy-Wal.	-	-	-	1.5	1.5	-	-	-	-	-	-
10. Zone XII	Littoral Soil Groundnut-Bajri	1.5	-	1.5	3.3	3.3	1.5	-	3.3	-	-	-

Table 4.0.2 (A) *Wages and hours worked by sex*

Percentage of
GDP : GDP by industry -

Average Triennium end date 1971-72.

Table 4.2 (A) (cont.)

Percentage of fields of Cotton harvested in different weeks
in some zones.

	CROP : Cotton.	W E R K N O.	Average Triennium ending 1971-72.																	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
SR.	Zone No.	Sub-zone.																		
1.	Zone I	Residual Soil Maize.	15.3	7.6	18.7	6.8	2.8	0.6	0.8	0.6	1.1	1.4	0.8	-	-	-	-	-	-	-
2.	Zone II	Residual Soil Cotton.	17.5	20.1	16.2	5.8	3.3	1.0	1.3	0.7	-	3.3	-	0.7	0.7	-	-	-	-	-
3.	Zone IV	Deep Black Soil Cotton.	8.8	8.8	12.1	13.9	13.4	11.9	8.3	5.0	2.2	0.8	0.6	-	0.2	0.2	0.2	-	-	-
4.	Zone V	Sandy Loam Soil Bajri-Tobacco.	12.0	10.0	17.2	17.4	3.7	6.6	6.9	2.6	2.7	0.3	0.7	-	-	0.2	-	-	-	-
5.	Zone VI	Loamy Sand Soil Bajri-Cotton.	6.6	7.7	11.2	5.1	8.7	8.7	14.8	5.6	2.6	5.1	0.5	-	-	-	-	-	0	-
6.	Zone VIII	Clay Alluvial Soil Cotton/ Dry Wheat.	2.3	4.4	2.8	6.7	4.3	14.0	13.0	14.5	8.6	8.8	9.3	3.8	1.7	-	-	-	-	-
7.	Zone IX	Residual Soil Groundnut.	4.7	6.1	6.0	5.6	3.5	5.8	5.6	4.9	5.8	4.7	2.3	2.1	0.4	-	-	0.2	-	-
8.	Zone X	Littoral Soil Cotton/Dry Wheat.	5.6	10.3	12.6	8.6	15.1	6.4	-	-	-	-	-	-	-	-	-	-	-	-
9.	Zone XI	Littoral Soil Paddy-Wal.	-	-	2.8	2.8	9.7	5.6	9.7	19.4	11.1	11.1	12.5	9.7	1.4	1.4	-	-	-	-
10.	Zone XII	Littoral Soil Groundnut, Bajri.	8.7	11.6	2.0	2.0	4.3	20.3	1.4	10.1	2.0	-	1.5	-	2.0	1.6	-	-	-	-

Table 4.2 (B)

Percentage of fields of cotton & wheat in different weeks in some zones.

Crop & Zone No.	Sub zone	Month	Figures in % Average Triennium ending 1971-72													
			1	2	3	4	5	6	7	8	9	10	11	12	13	
1. Zone I	Residual Soil Maize.	January	5.2	7.0	6.1	9.0	12.8	9.9	12.8	10.1	16	5.2	4	March		
2. Zone II	Residual Soil Cotton.		0.7	-	4.0	8.6	5.3	11.2	20.6	9.3	18.4	1.2	1.2			
3. Zone IV	Dry black Soil Cotton.		1.1	-	0.9	3.1	2.4	3.5	6.6	14.	11.1	1.	1.1			
4. Zone V	Sandy Loam Soil Bajri Tobacco.		-	0.5	1.2	1.7	1.0	4.6	7.7	11.5	13.2	9.6	12.0	13.0	13.1	
5. Zone VI	Loamy sand Soil Bajri Cotton.		0.6	1.1	0.6	6.3	2.9	5.7	4.6	8.0	7.4	12.0	11.0	13.1		
6. Zone VIII	Clay Alluvial Soil Cotton/Dry Wheat.		-	1.4	1.4	1.8	4.9	2.8	7.3	8.4	9.8	12.9	15.0	10.1	6.0	
7. Zone IX	Residual Soil Groundnut.		3.7	5.4	2.7	3.2	4.5	4.5	5.0	5.2	7.2	10.6	7.2	5.0	4.2	
8. Zone X	Littoral Soil Cotton/Dry wheat.		-	2.4	3.0	0.8	5.0	5.7	1.6	8.1	8.9	8.1	22.0	13.8	8.9	
9. Zone XI	Littoral Soil Paddy/Wal.		-	-	-	-	-	-	1.5	-	11.6	-	1.5	7.2	8.7	8.7
10. Zone XII	Littoral Soil Groundnut.		1.5	-	3.0	3.0	4.6	9.0	6.0	10.6	6.0	7.5	4.4	17.9	16.4	

Table 4. -

Percentage of fields of cotton harvested in different weeks in some zones.

Crop : Cotton.

Figures in %
Average triennium ending 1971-72.
W E K N O.

Sr. Zone No. Sub-zone. 41 42 43 44 45 46 47 48 49 50 51 52
No.

1. Zone I	Residual Soil Maize.	-	-	-	-	-	-	-	0.6	-	-	0.3	
2. Zone II	Residual Soil Cotton.	-	-	-	-	-	-	-	-	-	-	1.3	
3. Zone IV	Deep black Soil Cotton.	-	-	-	-	-	-	-	-	-	-	-	
4. Zone V	Sandy Loam Soil Bajri-Tobacco.	-	-	-	-	-	-	-	-	-	-	1.1	
5. Zone VI	Loamy Sand Soil Bajri-Cotton.	-	-	-	-	-	-	-	-	-	-	1.1	
6. Zone VIII	Clay Alluvial Soil Cotton/Dry Wheat.	-	-	-	-	-	-	0.3	-	-	-	0.3	
7. Zone IX	Residual Soil Groundnut.	0.2	-	0.2	-	2.0	3.2	2.5	1.5	2.7	3.5	3.7	2.5
8. Zone XII	Light clay Soil Groundnut-Bajri.	-	-	-	-	-	-	-	-	-	-	-	

Table 42 (B) (Cont.)

Crop : Cotton.	Weeks in zone	Percentage of fields : cotton harvested in different weeks in zone										Average Triennium ending 1971-72.										
		W	E	B	K	N	O	14	15	16	17	18	19	20	21	22	23	24	25	26		
Sr. No.	Zone No.																					
1.	Zone I	Residual Soil	1.4	0.9	1.2	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.	Zone II	Residual Soil Cotton.	5.3	0.7	1.3	-	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3.	Zone IV	Deep black soil	0.1	1.8	2.0	-	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4.	Zone V	Sandy Loam Soil BaJri-Tobacco.	4.8	2.4	1.9	6.0	1.1	0.7	1.0	-	0.5	-	-	-	-	-	-	-	-	-	-	
5.	Zone VI	Loamy Sand Soil BaJri-Cotton.	2.3	4.6	1.1	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6.	Zone VIII	Clay Alluvial soil Cotton/ Dry Wheat.	8.4	3.5	2.1	1.4	1.4	-	0.3	-	-	0.3	-	0.3	-	0.3	-	0.3	-	0.3	-	
7.	Zone IX	Residual Soil Groundnut.	4.7	3.2	0.5	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8.	Zone X	Littoral Soil Cotton/Dry Wheat	4.1	2.4	4.1	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9.	Zone XI	Littoral Soil Paddy-Wheat.	15.9	18.8	11.6	11.6	2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10.	Zone XII	Littoral Soil Groundnut-BaJri.	4.4	1.5	-	4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Continue.....2

Table 4.3

Weeks in some zone	Percentage of fields of Maize sown in different												Average	Figures in % Triennium ending 1971-72.										
	W	T	G	K	N	O	14	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Crop : Maize.																								
No. Zone No. Sub-zone.																								
1. Zone I Residual soil	0.4	0.4	0.2	0.2	0.2	1.8	18.4	18.4	18.4	18.0	7.4	9.0	5.8	1.2	-	-	-	-	-	-	-	-	0.2	
Maize.																								

Table 4.3 (A) -

Percentage of fields of Maize harvested in different weeks in some zones.

Figures in %
Average Triennium ending.

Crop : Maize.	Sr. Zone No.	Sub-zone.	35	36	37	38	39	40	41	42	43	44
1. Zone I Residual Soil Maize.	0.4	3.8	8.8	26.1	24.6	16.7	8.3	8.5	1.7	1.1		

XXX

Table 44 (A)

Percentage of Maize or Paddy harvested in different weeks in some zones

Season in which it was sown during 1971-72.

Crop :- Paddy.

Week No. :-

Sr. Zone No. Sub Zone 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51

1. Zone I
Residual soil 0.3 - 0.6 - 3.6 5.3 10.4 20.1 23.0 10.1 2.2 3.1 2.0 1.7 0.6 - -
Maize

2. Zone II
Residual soil - - - - 4.8 10.2 23.1 35.5 18.0 3 4.2 3.2 1.6 - - - - - -
Cotton.

3. Zone III
Residual soil - - 0.5 - 0.8 1.8 3.8 21.2 12.0 20.2 8.4 4.3 5.2 0.3 0.5 0.3 0.3 0.5
Paddy

4. Zone V
Sandy Loam soil Bajra 0.6 0.2 1.7 5.0 12.3 18.7 20.3 11.5 6.5 4.5 6.8 6.4 2.0 - - 0.6
To bacco.

5. Zone XI
Litteral soil - - - 2.8 - - 5.6 25.4 16.5 23.0 8.5 5.6 6.5 - 14 - 1.4 -
Paddy - Mal

Table 4.5

Figures in %

Percentage of fields of Wheat sown in different weeks in some zones.

Average triennium ending 1971-72.

Crop : Wheat.	Name of zone.	Zone No.	Week No.																						
			35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5
1. Residual soil - Maize	Zone I.																								
2. Residual soil - Cotton	Zone II.																								
3. Deep black soil - Cotton	Zone IV																								
4. Sandy loam soil-Bajri-	Zone V																								
Tobacco																									
5. Loamy sandy soil-Bajri-Cotton	Zone VI																								
			1.1	.5	1.6	3.7	18.0	24.9	28.0	9.0	5.8	4.8	2.1	.5											
6. Sandy soil - Bajri-Pulses	Zone VII.																								
7. Clay alluvial soil	Zone VIII																								
Cotton/dry wheat			.7	1.5	.2	1.9	2.7	10.9	16.3	8.5	10.7	14.6	13.3	9.7	3.2	3.6	1.5	0.7							
8. Residual soil - Groundnut	Zone IX.		.1	.1	.6	.9	.4	1.1	1.8	4.0	6.6	10.9	19.9	21.3	15.5	8.9	2.7	2.5	.9	1.7					
9. Littoral soil Zone X																									
Dry wheat.																									
10. Littoral soil Zone XI.																									
Groundnut - Bajri.																									

Table: 4.5(1)
Percentage of fields of wheat harvested in different
Weeks in some zones.

Average triennium ending 1971-72.

Sr. No.	Zone No.	Zone	Week No.																
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.	Zone I.	Residual soil Maize.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
2.	Zone II.	Residual soil Cotton.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
3.	Zone III.	Deep black soil Cotton.	—	—	—	—	—	—	—	—	—	—	5.2	7.8	11.7	36.3	23.4	7.0	—
4.	Zone IV.	Sandy loam soil Bajri-Tobacco	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
5.	Zone V.	Loamy sand soil Bajri-Cotton.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
6.	Zone VI.	Sandy soil Bajri-Pulses.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
7.	Zone VII.	Clay Alluvial soil.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
8.	Zone VIII.	Cotton/Dry wheat.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
9.	Zone IX.	Moratal soil Cotton/Dry wheat.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10.	Zone X.	Littoral soil Groundnut-Bajri.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

XXXIX

Table No. 5.00

Percentages of net sown area under groups of crops in
the crop zone of Gujarat State.

Based on average 1968-69 - 69-70

' A "short duration Kharif crops; 'B" Long duration Kharif crops; "C" Rabi
crops; "D" Others crops.

Sr. No.	Subzones names	A	B	C	D	G.S.A.	Irri.
1.	Residual Soil Maize Zone	32.0	16.9	10.7	1.8	111.4	8.9
2.	Residual Soil Cotton-Zone	64.9	31.1	2.5	3.9	102.4	5.7
3.	Residual Soil, Paddy Zone	61.4	9.1	8.3	27.0	105.8	4.4
4.	Deep Black Soil, Cotton Zone.	35.4	49.5	5.4	13.4	103.7	15.8
5.	Sandy Loam Soil, Bajri-Tobacco Zone	64.9	33.5	7.9	2.9	109.2	24.9
6.	Loamy Sandy Soil, Bajri-Cotton Zone	74.6	20.4	18.5	2.5	116.0	28.5
7.	Sandy Soil Bajri-Pulses Zone.	39.0	7.1	11.3	1.3	109.7	14.8
8.	Clay Alluvial Soil Cotton-Dry wheat Zone	44.0	45.3	12.2	0.3	101.8	7.3
9.	Residual Soil Groundnut Zone	35.8	9.5	5.6	4.2	105.1	10.6
10.	Liftoral Soil Cotton-Dry wheat Zone	28.8	57.2	10.0	5.5	101.5	7.2
11.	Liftoral Soil Paddy-wal Zone	39.6	14.2	11.3	45.6	120.8	16.0
12.	Liftoral Soil Groundnut-Bajri Zone	68.9	5.6	6.5	5.8	106.8	12.8
Gujarat State		72.1	20.7	9.0	5.1	106.9	11.5

100

Table 5.01.

Residual Soil-Maize Zone,

Percentage of NSA under groups of crop in talukas.

Group A short duration Kharif crop; Group B long duration Kharif crop; Group C Rabi crop; Group D other crops.

Sr. No.	Taluka	A	B	C	D	G.S.A.	Irrigated
1.	Danta	86.2	14.7	19.5	1.6	122.0	26.9
2.	Khedbrahma	65.8	31.9	8.7	1.7	108.1	14.2
3.	Idar	63.0	34.6	10.0	3.5	111.1	23.2
4.	Vijaynagar	91.3	5.9	28.9	3.7	129.8	18.8
5.	Bhiloda	77.8	19.6	12.9	2.6	112.9	19.0
6.	Modasa	74.8	25.3	5.4	2.2	107.7	10.1
7.	Meghraj	83.4	16.3	5.0	0.2	104.9	5.4
8.	Malpur	87.9	12.0	4.5	0.3	104.7	5.0
9.	Sayad	68.8	30.7	3.0	1.5	104.0	7.6
10.	Balasinor	67.7	31.9	2.2	0.6	102.4	3.1
11.	Lunavada	88.3	10.6	6.5	0.3	105.7	4.6
12.	Santrampur	95.4	4.2	17.7	0.5	117.8	2.8
13.	Nehra	89.3	11.0	3.2	0.2	104.3	2.4
14.	Jhalod	91.1	3.1	25.9	4.0	124.1	5.9
15.	Sochra	85.2	16.1	6.3	0.3	107.9	5.0
16.	Neogadhbaria	90.2	11.2	4.8	2.4	108.6	2.0
17.	Limkheda	97.1	3.1	13.5	0.7	114.4	2.7
18.	Dohad	92.2	2.7	26.7	4.2	127.8	6.4
<hr/>							
Zone		82.0	16.9	10.7	1.8	111.4	8.7

XXXXI

Table No. 5.02

Residual Soil-Cotton Zone

Percentage of NSA under groups of crop; in talukas.

Group A short duration Kharif crop; Group B long duration Kharif Crop; Group C Rabi crop; Group D other crops.

Sr. No.	Taluka	A	B	C	D	G.S.A.	Irrigated
1.	Halol	71.3	32.1	1.9	0.2	106.0	1.9
2.	Jambughoda	87.8	24.8	0.9	1.4	114.9	9.1
3.	Jabugam	62.4	34.0	1.2	5.2	102.8	7.3
4.	Chhotautdepur	73.1	23.2	1.2	4.3	101.8	0.9
5.	Naswadi	45.2	47.3	1.2	7.3	101.0	2.3
6.	Nandod	46.3	46.9	1.0	6.4	100.6	13.5
7.	Dediapada	67.1	28.2	1.1	3.9	100.3	2.4
8.	Sagbara	73.3	25.0	2.1	0.3	100.7	4.8
9.	Nizar	82.4	8.3	12.8	0.8	104.3	9.4
Zone		64.9	31.1	2.5	3.9	102.4	5.7

XXXXII

Table No. 5.03

Residual Soil-Paddy zone.

Percentage of NSA under groups of crop in talukas.

Group A short duration Kharif crop; Group B long duration Kharif crop; Group C Rabi crop; Group D other crops.

sr. No.	Taluka	A	B	C	D	G.S.A.	Irrigated
1.	Songadh	74.7	15.4	4.7	10.5	105.3	2.6
2.	Uchhal	77.6	19.7	1.5	1.7	100.5	0.9
3.	Vyara	66.7	19.9	8.9	11.8	107.3	5.2
4.	Ahwa	73.8	5.2	11.4	9.9	100.3	0.3
5.	Chikhaldia	44.1	7.6	12.7	46.9	111.3	8.5
6.	Vansda	65.7	8.4	5.5	25.6	105.2	2.3
7.	Dharampur	66.2	6.0	5.9	23.7	101.8	0.7
8.	Pardi	43.9	1.7	12.9	54.9	113.4	15.2
9.	Umbargam	41.9	1.1	3.5	56.9	103.4	2.8
Total		61.4	9.1	8.3	27.0	105.8	4.4

XXXXIII

Table No. 5.04 Deep black Soil-Cotton zone.

Percentage of NSA under groups of crop in talukas.

Group A short duration Kharif crop; Group B long duration Kharif crop; Group C Rabi crop; Group D other crops.

Sr. No.	Taluka	A	B	C	D	G.S.A.	Irrigated
1.	Amod	17.7	71.7	8.4	3.1	100.9	39.4
2.	Karjan	17.2	75.4	3.8	5.5	102.4	35.6
3.	Bharuch	15.5	69.3	9.8	5.8	100.4	24.6
4.	Dabholi	24.9	68.0	3.3	7.1	103.8	13.4
5.	Jankheda	32.1	57.2	1.8	11.4	102.5	8.3
6.	Shikor	21.7	71.0	3.0	6.9	102.6	41.9
7.	Waghodia	35.8	63.9	2.9	3.4	106.0	8.0
8.	Tilakwade	36.2	55.2	0.4	8.8	100.6	0.9
9.	Ankleswar	34.3	50.5	4.2	11.6	100.6	6.5
10.	Jhagadia	37.5	51.8	1.6	9.0	100.9	6.8
11.	Valia	40.1	46.7	1.8	12.6	101.2	10.8
12.	Mangrol	52.2	33.4	1.5	13.9	101.0	3.1
13.	Mandvi	59.9	33.4	8.1	27.9	106.2	29.6
14.	Kamrej	36.8	33.4	8.1	27.9	106.2	29.6
15.	Bardoli	37.8	22.0	17.0	40.3	117.1	32.4
16.	Palsana	34.5	20.3	10.2	44.5	109.5	43.6
17.	Mahuwa (S.R.)	64.0	17.7	10.7	18.3	110.7	17.4
18.	Valod	57.2	23.6	10.1	19.7	110.6	5.6
Zone		35.4	50.4	5.2	12.8	103.8	15.3

XXXXIV

Table No. 5.05 Sandy Loam Soil-Lajri-Tobacco zone.

Percentage of NSA under groups of crop in talukas.

Group A short duration Kharif crop; Group B long duration Kharif crop; Group C Rabi crop; Group D other crops.

sr. No.	Taluka	A	B	C	D	G.S.A	Irrigated
1.	Anand.	58.2	43.9	8.8	3.1	114.0	50.9
2.	Borsad	71.5	26.2	4.7	2.9	105.3	24.7
3.	Petlad	87.2	19.8	8.4	3.3	118.7	35.8
4.	Nadiad	83.3	20.1	15.0	2.9	121.3	40.5
5.	Thasra	56.1	43.4	4.7	1.3	105.5	10.5
6.	Savli	38.4	59.4	2.1	2.0	101.9	10.3
7.	Padra	41.3	53.0	5.3	5.0	106.1	14.1
8.	Vadodara	37.1	54.1	5.1	7.3	103.6	33.5
9.	Kalol(Pmls)	89.0	16.3	4.6	0.3	110.2	11.3
10.	Ahmedabad city	68.0	6.1	12.8	19.1	106.0	24.4
11.	Laskroli	30.3	15.7	14.7	1.3	112.0	32.6
12.	Mahemabud	91.7	9.4	10.8	1.0	112.9	27.1
13.	Matar	73.6	15.0	18.4	2.2	109.2	42.2
14.	Kapadvanj	76.0	24.3	4.5	1.0	106.4	9.5
Average		66.3	31.6	8.2	2.8	109.4	26.0

Table No. 5.06 Loamy Sand Soil - Bajri-Cotton Zone.

Percentage of NSA under groups of crop in talukas.

Group A short duration Kharif crop; Group B long duration Kharif crop; Group C Rabi crop; Group D other crops.

Sr. No.	Taluka	A	B	C	D	G.S.A.	Irrigated
1.	Mehsana	77.0	16.4	25.4	2.1	120.9	36.8
2.	Visnagar	81.3	9.3	37.2	2.3	130.1	42.3
3.	Vijapur	76.0	13.2	32.6	5.0	131.8	47.4
4.	Kadi	52.9	34.3	11.7	1.7	110.6	23.7
5.	Kaloji (Meh.)	66.2	27.2	20.3	3.3	117.0	38.9
6.	Prantij	85.1	13.1	7.7	2.5	108.4	12.2
7.	Jehgam	87.0	14.9	8.5	1.6	112.5	27.5
8.	Limatnagar	67.7	31.9	7.0	1.8	108.4	17.5
9.	Chansma	69.7	18.1	15.6	2.3	105.7	17.0
Zone		74.6	20.4	18.5	2.5	116.0	28.4

XXXXVI

Table No. 5.07

Sandy Soil-Sajri-Pulses Zone.

Percentage of NSA under groups of crop in talukas.

Group A short duration Kharif crop; Group B long duration Kharif crop; Group C Rabi crop; Group D other crops.

Sr. No.	Taluka	A	B	C	D	G.S.A.	Irrigated
1.	Lakhpur	99.1	0.5	1.2	0.1	100.9	5.6
2.	Naknra	98.3	1.8	11.3	0.1	111.5	25.1
3.	Abdasa	97.1	2.1	2.4	0.1	101.7	3.9
4.	Shuj	94.1	5.0	6.2	0.3	105.6	16.8
5.	Wao	97.4	0.8	0.7	1.6	100.5	0.5
6.	Tharad	99.3	1.8	7.4	4.0	112.5	7.9
7.	Deodar	95.3	3.2	11.7	1.1	111.3	11.8
8.	Dhamera	96.0	0.4	13.1	5.5	115.0	13.1
9.	Jeesa	95.9	1.0	19.0	2.0	117.9	18.5
10.	Kankrej	74.4	5.7	24.9	1.7	106.7	28.2
11.	Palanpur	94.2	2.4	24.2	3.6	124.4	27.4
12.	Wadgam	89.9	1.3	29.5	8.6	129.3	33.5
13.	Patan (meh.)	78.2	8.4	28.4	0.1	115.1	32.6
14.	Siddhpur	86.1	6.1	27.8	0.7	120.7	30.1
15.	Kheralu	79.7	9.6	20.7	3.6	113.6	23.9
16.	Mandvi.	88.8	11.3	2.0	0.6	102.7	18.9
17.	Mundra	82.9	13.7	1.8	0.5	103.9	11.3
18.	Anjar	81.3	18.8	2.4	0.2	102.7	5.6
19.	Bhachau	86.3	13.9	1.6	-	101.3	3.4
20.	Rapar	86.9	12.9	2.9	-	102.7	4.1
21.	Santnalpur	81.2	14.9	3.5	0.6	100.2	1.6
22.	Radhanpur	75.5	15.5	10.4	2.4	104.2	8.5
23.	Karij	68.6	18.2	16.4	4.0	107.2	16.8
	Zone	89.0	7.1	11.8	1.8	109.7	14.8

XXXXVII

Table No. 5.08

Clay Alluvial Soil-Cotton/Dry Wheat Zone.

Percentage of NSA under groups of crop in talukas.

Group A short duration Kharif crop; Group B long duration Kharif crop; Group C Rabi crop; Group D other crops

Sr. No.	Taluka	A	B	C	D	G.S.A.	Irrigated
1.	Sami	45.7	39.3	15.7	0.5	101.2	2.1
2.	Dosada	34.8	64.9	2.1	-	101.8	0.5
3.	Viramgam	42.3	54.0	4.6	10.3	101.2	4.2
4.	Malia (M)	54.5	45.3	1.2	0.1	101.1	2.2
5.	Halwad	52.1	47.8	2.3	Nil	102.2	12.9
6.	Dhangadhra	51.0	49.0	1.2	-	101.5	5.8
7.	Lakhtar	40.1	58.3	1.6	0.1	100.1	1.0
8.	Sanand	48.0	41.0	10.5	1.6	101.1	20.7
9.	Limbadi	44.4	46.4	10.5	Nil	101.3	3.9
10.	Dholka	32.1	40.5	31.3	0.8	104.7	17.0
11.	Dhandhuka	44.2	35.6	20.9	Nil	100.7	4.1
12.	Khambhat	53.8	20.1	29.1	1.3	104.3	19.1
Total							
	Zone	44.0	45.3	12.2	0.3	101.8	7.3

Table No. 5.09

Residual Soil-Groundnut Zone.

Percentage of NSA under groups of crop in talukas.

Group A short duration Kharif crop; Group B long duration Kharif crop; Group C Rabi crop; Group D other crops.

Sr. No.	Taluka	A	B	C	D	G.S.A.	Irrigate
1.	Muli	63.6	35.2	2.9	2.4	104.1	11.0
2.	Wadhwan	49.8	51.1	1.7	-	102.6	8.0
3.	Sayla	74.2	22.2	1.8	3.9	102.1	4.5
4.	Jodia	76.0	13.4	13.5	0.8	103.8	4.7
5.	Morvi	70.7	28.7	2.7	0.3	102.4	6.7
6.	Wankaner	86.1	10.9	6.4	0.4	103.8	16.6
7.	Jasdan	82.9	9.5	6.6	5.8	104.8	11.5
8.	Gadhda	78.2	16.5	3.5	3.4	101.6	11.7
9.	Lathi	88.7	9.4	3.7	1.2	103.0	7.0
10.	Umaraja	79.5	18.1	9.5	1.7	108.8	24.9
11.	Botad.	31.0	14.7	4.6	2.0	102.3	13.8
12.	Lilia	81.3	14.6	2.3	3.5	101.7	3.6
13.	Gariachar	91.8	7.3	0.8	2.0	101.9	2.3
14.	Shihr	75.4	9.8	4.6	12.1	101.9	6.7
15.	Palitana	80.4	7.3	2.7	11.8	102.2	6.9
16.	Chogho	87.8	0.9	6.7	11.6	107.0	7.1
17.	Bhavnagar	81.1	4.0	6.8	11.4	103.3	7.8
18.	Vallabhipur	70.9	12.8	17.6	0.5	101.8	12.7
19.	Upseta	79.2	17.1	6.4	3.1	105.8	30.4
20.	Dhoraji	87.7	10.3	10.5	2.2	110.7	27.8
21.	Kukiyana	78.9	15.7	3.1	4.8	102.5	8.6
22.	Manavadar	84.1	10.9	3.5	5.2	103.7	10.7
23.	Vanthali	77.2	10.4	8.3	12.2	108.1	16.4
24.	Junagadh	83.5	12.3	9.9	4.5	110.2	22.9
25.	Keshod	96.8	3.7	9.9	6.6	117.0	13.6
26.	Mendarda	85.2	3.9	13.3	12.0	114.4	16.7
27.	Visavadar	89.3	4.5	5.9	8.0	108.7	13.6
28.	Khamphalia	98.6	1.7	6.2	0.4	106.9	8.0
29.	Laipur	98.1	0.8	7.7	0.7	107.3	8.3
30.	Jamnagar	97.4	0.5	10.3	0.5	108.7	13.7
31.	Dhrol	95.6	2.7	4.3	1.1	103.7	7.0
32.	Bhanwad	97.8	2.0	8.0	1.0	108.8	11.3
33.	Jam Jodhpur	92.0	4.4	5.2	4.0	105.6	11.2
34.	Kalawad	97.0	1.5	9.3	1.0	108.8	13.8
35.	Paddhari	95.7	3.7	4.8	0.5	104.7	7.4
36.	Leodiaka	95.0	2.3	2.0	2.4	105.8	30.4
37.	Rajkot	91.7	5.0	4.3	2.8	103.8	11.0
38.	Chotila	81.0	6.6	4.2	11.8	103.6	6.1
39.	Korda-Sangani	87.0	7.2	0.8	5.7	100.7	9.9
40.	Babra	87.3	7.1	1.6	4.9	100.9	4.8
41.	Ammali	93.5	3.5	10.0	2.0	109.0	13.5
						2 ...

II

Sr. No.	Taluka	A	B	C	D	G.S.A.	Irrigated
42.	Dhari	84.4	2.0	4.7	12.5	103.6	7.5
43.	Kundla	85.3	6.3	1.2	8.4	101.2	3.7
44.	Khambha	77.9	2.9	1.5	19.2	101.5	3.4
45.	Kandorna	93.3	5.0	2.9	1.8	103.0	9.8
46.	Gondal	89.4	7.5	5.1	3.1	105.1	14.6
47.	Jetpur.	93.2	5.5	10.9	2.4	112.0	21.6
48.	Kankavav	95.6	3.4	3.1	1.4	103.5	8.4
49.	Bhesan	94.9	2.3	7.0	3.3	107.3	9.5
50.	Talala	103.8	3.0	12.4	4.2	123.4	22.8
Zone		85.3	10.0	5.7	4.1	105.1	10.9

L

Table No. 5.10

Littoral Soil-Cotton/Dry wheat Zone.

Percentage of NSA under groups of crop in talukas.

Group A short duration Kharif crop; Group B long duration Kharif crop; Group C Rabi crop; Group D other crops.

Sr. No.	Taluka	A	B	C	D	G.S.I.	Irrigated
1.	Jambusar	31.1	64.9	5.9	0.8	102.7	2.2
2.	Vagra	20.91	58.2	19.6	1.5	100.2	2.8
3.	Hansot	26.0	59.0	5.3	0.8	100.1	3.2
4.	Olpad	36.3	43.8	7.4	14.7	102.2	22.1
	Zone	28.3	57.2	10.0	5.5	101.5	7.2

Table No. 5.11 Littoral Soil-Paddy-Wal Zone.

Percentage of NSA under groups of crop in talukas.

Group A short duration Kharif crop; Group B long duration Kharif crop; Group C Rabi crop; Group D other crops.

Sr. No.	Taluka	A	B	C	D	G.S.A.	Irrigated
1.	Choryasi	44.7	19.5	7.3	31.4	103.4	26.7
2.	Nevsari	43.6	23.1	12.9	34.0	113.6	21.8
4.	Valsad.	30.2	1.3	12.1	69.1	112.7	5.7
3.	Gandevi.	39.1	8.2	12.6	54.7	114.5	2.2
Zone		39.5	14.2	11.3	45.6	110.8	16.0

Table No. 5.12 Littoral Soil-Groundnut Bajri Zone.

Percentage of NSL under groups of crop in talukas.

Group 4 short duration Kharif crop; Group 3 long duration Kharif crop; Group 2abi crop; Group 0 other crops.

Sr. No.	Taluka	A	B	C	D	G.S.A.	Irrigated
1.	Okha Mandal	97.0	2.2	1.4	0.1	100.7	2.3
2.	Kalyanpur	86.5	14.1	2.3	0.4	104.1	6.2
3.	Porbandar	72.5	11.3	12.5	2.5	106.3	17.8
4.	Ranavav	85.2	11.5	4.5	4.0	105.3	12.2
5.	Mangrol (J.N.D)	81.7	0.7	8.3	10.0	107.2	25.0
6.	Malia (J.N.D)	94.5	0.6	8.3	9.7	113.1	17.9
7.	Patan (Veraval)	97.4	0.4	6.9	3.5	113.2	18.0
8.	Kodinar	79.5	2.5	6.5	13.5	107.0	23.2
9.	Una	87.5	4.0	0.5	3.7	107.3	16.2
10.	Talaja	95.4	0.5	14.5	3.6	114.1	18.2
11.	Jafrabad	95.0	1.2	2.2	3.3	102.2	3.0
12.	Rajula	95.0	1.0	2.6	4.4	103.1	3.6
13.	Mahuwa	92.2	1.2	5.1	6.4	104.9	6.7
Average		88.9	5.6	6.5	5.8	106.8	12.8

Table - 6.0

Weekly average maximum and minimum temperatures and relative humidity in some zones.

(Temperature in Centigrade)
Relative humidity in %)

Zone	Name of zone & item.		Week No.							
			1 January	2	3	4	5	6 February	7	8
Zone I	Residual Soil Maize.		Maxi. 26.57	27.16	25.97	26.79	27.31	28.56	28.71	28.75
			Mini. 17.95	18.62	16.41	16.68	15.85	16.23	17.04	17.44
			R.H. 71.6	70.4	79.5	66.5	66.4	57.3	65.06	57.4
Zone IV	Deep black Soil-Cotton.		Maxi. 29.10	29.56	19.2	19.57	30.06	31.33	31.97	32.69
			Mini. 14.49	14.03	13.61	13.40	14.06	14.69	15.36	17.05
			R.H. 72.5	74.5	68.8	66.1	65.4	65.3	69.1	69.3
Zone V	Sandy Loam Soil Bajri- & Tabacco.		Maxi. 31.44	33.25	33.17	33.58	33.51	36.2	36.11	34.97
			Mini. 10.53	12.95	12.74	13.54	13.01	15.75	17.52	19.70
			R.H. 67.7	68.0	69.4	66.9	66.7	64.6	71.3	68.9
Zone VI	Loamy sand Soil Bajri- Cotton.		Maxi. 27.86	27.48	26.87	26.73		27.13	29.39	30.39
			Mini. 10.57	92.9	11.07	9.03	29.00	11.38	12.78	12.07
			R.H. 74.2	77.8	75.7	70.6	75.1	63.5	65.1	71.9
Zone VIII	Clay Alluvial Soil-Cotton/ Dry Wheat.		Maxi. 28.98	28.81	28.52	28.60	29.23	30.11	31.53	32.52
			Mini. 12.53	11.81	12.07	11.70	12.70	13.30	14.41	16.05
			R.H. 59.1	57.8	58.3	56.7	53.6	55.3	57.8	62.0
Zone IX	Residual Soil Groundnut.		Maxi. 25.64	25.78	26.09	26.33	26.05	26.44	28.22	29.04
			Mini. 10.42	9.68	9.05	9.47	9.45	11.13	11.17	12.58
			R.H. 72.2	74.1	75.5	74.9	73.9	72.2	75.5	77.6
Zone XI	Littoral Soil Paddy-Wal.		Maxi. 29.19	30.19	30.25	29.81	32.89	32.02	32.06	32.50
			Mini. 13.17	12.87	11.89	12.01	12.86	12.61	13.78	15.76
			R.H. 67.8	73.7	68.8	72.2	64.2	63.9	74.3	73.0
Zone XII	Littoral Soil Groundnut- Bajri.		Maxi. 28.46	27.57	27.14	25.68	25.96	25.93	28.29	27.75
			Mini. 18.39	16.71	17.89	15.96	15.82	16.43	19.44	18.61
			R.H. -	-	-	-	-	-	-	-
State			Maxi. 28.34	28.70	25.49	27.05	27.80	29.79	30.98	31.28
			Mini. 13.18	13.02	12.83	12.54	12.97	14.05	14.88	16.43
			R.H. 73.4	70.9	69.4	67.7	66.1	62.6	68.5	68.6

Note :- (1) For Standard weeks refer Annexure I.

(2) Above table indicates humidity and temperature data of available stations in Gujarat State.

LIII

Table 6.0 (Contd.)

Zone.	Item.	Week No.												
		9	10	11	12	13	14	15	16	17	18	March	April	May
Zone I	Maxi.	30.25	31.18	33.42	32.49	33.73	36.15	38.56	38.31	38.97	39.99			
	Mini.	18.07	18.88	21.12	20.24	22.43	27.09	24.77	24.87	25.65	26.47			
	R.H.	52.6	53.2	66.4	68.6	72.5	60.0	61.7	64.5	73.5	73.2			
Zone II	Maxi.	33.17	34.92	35.84	35.48	35.81	37.62	38.82	39.14	39.39	39.18			
	Mini.	18.13	19.51	20.31	21.30	20.05	20.82	23.29	24.07	24.93	26.35			
	R.H.	65.4	66.7	69.0	72.3	67.4	70.2	67.7	71.3	72.6	75.1			
Zone V	Maxi.	35.96	38.46	38.89	37.90	38.52	40.83	41.70	42.28	41.57	43.00			
	Mini.	20.27	20.57	21.32	22.48	24.46	25.96	27.57	28.63	28.29	28.13			
	R.H.	70.4	63.4	68.1	67.0	67.4	73.0	76.0	71.5	73.4	71.2			
Zone VI	Maxi.	31.84	33.48	35.38	37.97	37.29	38.39	37.32	38.46	39.90	39.98			
	Mini.	16.16	-	-	-	-	-	-	21.42	24.00	26.79			
	R.H.	62.6	52.8	61.4	67.7	65.4	64.6	69.2	65.8	63.6	70.1			
Zone VIII	Maxi.	33.29	35.25	36.77	36.43	37.54	38.67	40.17	40.53	40.20	41.07			
	Mini.	16.85	17.53	19.90	19.96	20.87	22.44	24.12	24.20	27.36	25.90			
	R.H.	61.1	52.6	58.6	64.8	63.8	60.9	58.5	55.9	58.7	62.7			
Zone IX	Maxi.	30.22	32.85	33.17	32.98	33.29	34.26	35.96	36.49	36.34	36.42			
	Mini.	18.75	14.99	16.51	17.15	17.51	17.57	19.75	20.90	21.41	22.18			
	R.H.	75.0	72.5	77.8	79.8	78.3	81.8	81.2	80.2	78.0	83.1			
Zone XI	Maxi.	33.54	34.93	36.04	34.54	36.55	36.69	38.00	36.70	37.38	37.01			
	Mini.	16.05	16.45	18.62	18.93	19.65	20.02	22.17	22.59	23.73	24.60			
	R.H.	72.8	68.6	73.4	76.9	73.9	72.9	73.4	74.1	78.1	79.5			
Zone XII	Maxi.	28.57	29.43	31.36	30.22	31.46	29.78	31.04	31.96	32.85	31.53			
	Mini.	17.89	20.03	21.50	21.32	22.43	19.71	20.71	24.45	26.36	26.61			
	R.H.	-	-	-	-	-	-	-	-	-	-			
State	Maxi.	32.27	34.04	35.31	35.82	35.75	34.39	38.58	38.53	38.79	39.13			
	Mini.	17.38	18.30	19.87	20.20	21.06	21.64	23.49	23.96	25.24	25.92			
	R.H.	65.7	61.4	67.8	71.5	69.9	69.6	69.7	68.8	70.5	72.8			

Table 6.9 (Contd)

Zone	Item	Week No.									
		19 May	20	21	22	23	24 June	25	26	27	28 July
Zone I.	Maxi.	39.91	39.79	39.29	38.57	37.15	35.82	34.80	33.73	31.95	32.00
	Mini.	26.55	26.94	28.41	27.30	27.00	27.42	27.57	27.11	26.59	26.85
	R.H.	78.6	75.7	79.7	76.4	73.4	78.4	81.9	85.5	85.9	83.8
Zone IV	Maxi.	39.54	35.64	38.77	37.16	35.81	35.30	34.93	35.02	32.56	32.38
	Mini.	26.47	26.94	26.93	27.75	26.64	27.16	26.64	26.19	26.82	26.05
	R.H.	70.5	71.5	76.8	75.4	80.3	79.9	83.8	83.9	86.9	86.2
Zone V	Maxi.	42.87	43.90	42.83	42.91	41.61	40.06	38.51	38.53	37.23	35.93
	Mini.	27.67	28.37	27.30	27.25	26.91	27.39	27.53	27.11	26.41	26.37
	R.H.	77.0	71.9	72.3	71.4	75.1	73.9	73.8	76.1	79.6	78.7
Zone VI	Maxi.	40.58	41.10	40.74	40.54	38.88	37.95	38.31	33.55	33.77	33.80
	Mini.	27.07	27.15	25.33	25.20	24.46	27.92	27.42	26.42	26.64	26.68
	R.H.	70.8	76.5	78.6	81.7	81.9	92.9	85.9	78.7	91.0	93.6
Zone VIII	Maxi.	41.90	42.04	41.82	41.14	39.50	39.35	37.52	36.07	35.27	35.28
	Mini.	25.91	26.60	26.75	27.28	27.32	27.07	27.14	26.54	26.19	26.13
	R.H.	62.8	62.3	70.3	71.3	75.4	75.5	78.5	79.2	83.4	63.1
Zone IX	Maxi.	39.20	37.45	36.40	36.55	36.18	36.67	35.69	34.45	33.52	34.06
	Mini.	23.00	24.51	24.68	25.30	24.92	26.26	26.12	25.58	25.25	25.34
	R.H.	83.4	82.5	84.4	83.9	84.9	85.1	86.5	86.8	89.5	88.3
Zone XI	Maxi.	36.51	36.76	35.38	35.41	34.58	34.39	33.38	32.46	31.54	31.58
	Mini.	29.9	25.93	26.94	26.35	27.03	26.67	26.45	25.83	25.17	25.55
	R.H.	78.1	79.5	82.1	81.6	84.1	86.7	87.7	88.8	89.6	87.9
Zone XII	Maxi.	32.82	32.73	32.78	32.08	32.48	31.43	31.62	30.81	29.29	29.67
	Mini.	27.14	27.61	27.93	27.57	27.43	29.14	28.57	27.00	26.47	26.95
	R.H.	-	-	-	-	-	-	-	-	-	-
State	Maxi.	39.81	39.23	38.90	38.65	37.45	36.86	35.89	34.99	33.53	33.49
	Mini.	26.09	26.83	26.83	26.75	26.35	27.30	27.11	26.49	26.26	26.23
	R.H.	74.4	74.4	77.7	77.3	79.3	80.3	82.5	84.0	86.4	82.6

LV

- : 4 :-

Table 6.0 (Contd.)

Zone	Item.	29 July	30 ,	31 ,	32	33	34	35 ,	36 ,	37 September	38
Zone I	Maxi.	31.10	29.86	29.00	29.49	29.14	29.98	29.62	29.49	30.34	31.45
	Mini.	25.97	26.1-	26.05	26.49	26.29	26.21	26.10	26.09	25.79	25.83
	R.H.	90.8	93.4	91.0	88.0	90.3	88.6	91.7	89.7	89.6	89.3
Zone IV	Maxi.	31.05	31.20	30.01	29.96	30.14	31.10	30.80	31.16	31.59	32.96
	Mini.	26.11	25.86	25.61	25.75	25.58	25.98	22.14	25.30	25.36	25.40
	R.H.	88.2	89.7	89.8	90.3	89.4	88.2	90.5	87.9	89.1	84.7
Zone V	Maxi.	33.44	32.54	31.25	31.50	31.67	31.83	32.24	31.87	31.27	33.79
	Mini.	25.74	25.66	25.11	26.74	25.40	24.98	25.67	25.75	25.87	26.63
	R.H.	87.2	85.2	87.2	86.5	87.1	87.3	84.00	82.0	81.8	82.2
Zone VI	Maxi.	32.97	33.14	32.72	31.24	30.74	31.69	31.93	32.12	33.23	34.48
	Mini.	25.36	25.84	25.64	24.71	24.92	24.25	24.93	23.07	24.71	25.79
	R.H.	93.5	91.2	92.5	94.7	95.1	93.3	90.6	88.9	90.9	88.0
Zone VIII	Maxi.	34.18	34.36	32.62	32.64	32.70	32.97	33.10	33.43	33.71	35.28
	Mini.	25.47	25.75	25.55	25.17	24.71	24.91	24.72	24.39	24.35	24.20
	R.H.	84.6	85.4	86.8	87.2	86.7	84.0	83.9	83.1	82.8	80.8
Zone IX	Maxi.	33.56	32.54	31.40	31.01	30.86	31.54	31.49	33.61	32.46	32.96
	Mini.	24.93	24.58	24.32	24.33	23.71	23.77	23.04	22.36	22.49	22.21
	R.H.	90.3	90.6	32.3	91.4	91.5	90.2	90.9	89.7	88.8	87.7
Zone XI	Maxi.	31.31	30.83	30.15	30.20	30.61	31.00	30.77	30.87	31.65	33.15
	Mini.	25.08	24.88	24.90	24.80	24.66	24.77	24.45	24.13	23.81	23.38
	R.H.	87.4	89.2	89.4	90.0	88.7	88.9	89.4	88.0	88.4	86.8
Zone XII	Maxi.	29.95	30.38	29.57	39.34	30.67	31.43	30.67	30.00	31.53	31.95
	Mini.	26.52	27.24	26.86	27.44	26.95	26.83	26.57	26.43	26.86	27.52
	R.H.	-	-	-	-	-	-	-	-	-	-
State	Maxi.	32.41	32.03	30.98	30.87	30.84	31.47	31.42	32.55	32.03	33.34
	Mini.	25.62	25.69	25.45	25.61	26.77	23.70	24.58	24.67	24.84	25.14
	R.H.	88.0	89.2	89.8	88.4	89.6	88.6	88.6	86.90	87.3	85.6

Table 6.0 (Contd.)

Zone.	Item.	Week No.									
		39 October	40	41	42	43	44	45	46 November	47	48
Zone I	Maxi.	32.12	33.20	34.07	34.02	33.44	34.13	32.68	32.04	29.76	29.47
	Mini.	25.17	27.07	25.87	25.38	24.46	24.39	22.06	21.27	19.78	20.22
	R.H.	82.7	85.1	77.2	75.1	69.7	71.1	59.6	63.1	65.8	63.5
Zone IV	Maxi.	33.09	34.15	35.10	35.17	34.62	34.12	24.07	33.36	32.47	31.11
	Mini.	25.01	24.39	24.12	23.15	21.71	20.35	19.26	18.68	18.06	17.51
	R.H.	87.0	83.4	83.7	70.5	70.9	67.1	60.4	62.6	65.9	65.4
Zone V	Maxi.	35.64	35.49	36.41	36.94	36.51	35.68	35.17	34.71	33.51	31.10
	Mini.	26.57	25.57	25.39	24.63	24.40	22.42	21.79	20.96	18.70	14.54
	R.H.	82.3	80.5	79.2	81.0	76.2	79.4	76.3	76.4	65.9	64.6
Zone VI	Maxi.	64.61	35.18	35.82	35.61	35.20	34.54	34.25	33.34	32.28	29.98
	Mini.	23.71	23.57	22.57	29.93	21.43	17.21	14.43	14.25	14.64	12.39
	R.H.	87.3	83.3	78.5	75.4	68.7	67.0	66.7	64.4	66.8	73.8
Zone VIII	Maxi.	30.69	37.05	37.79	37.62	36.72	39.89	35.09	34.32	33.77	31.62
	Mini.	24.18	23.40	23.18	22.54	20.97	19.69	18.74	17.81	16.53	15.34
	R.H.	75.3	72.5	68.0	67.2	61.6	56.0	61.6	54.8	56.7	58.5
Zone IX	Maxi.	33.94	33.88	35.46	35.24	35.11	36.68	33.50	32.86	31.81	29.13
	Mini.	22.36	22.25	20.24	20.21	18.47	17.07	15.72	15.58	14.76	13.03
	R.H.	84.4	84.9	83.9	87.7	74.1	71.4	67.0	70.7	70.1	69.4
Zone XI	Maxi.	33.90	34.86	35.31	35.84	35.39	35.51	34.80	34.07	32.80	31.59
	Mini.	22.96	22.61	22.37	21.06	19.00	18.15	17.49	16.56	15.98	16.37
	R.H.	35.9	85.0	84.0	80.8	74.9	72.3	70.9	70.8	71.5	72.8
Zone XIII	Maxi.	32.48	32.81	32.86	33.24	32.71	32.42	33.19	31.62	32.76	32.76
	Mini.	26.81	26.05	26.14	25.86	25.76	23.52	20.85	20.48	21.05	19.62
	R.H.	-	-	-	-	-	-	-	-	-	-
State.	Maxi.	33.33	34.68	35.53	35.59	35.09	35.15	34.11	33.35	32.35	30.67
	Mini.	23.13	24.94	23.66	23.03	21.83	20.28	18.72	18.15	17.28	15.86
	R.H.	84.1	82.1	79.2	76.1	70.9	69.3	64.6	65.7	66.1	66.9

Table 6.0

(Contd.)

Zone	Item.	Week No.			
		(49)	50	51	52
December.					
Zone I	Maxi.	27.92	26.14	26.01	25.91
	Mini.	19.02	17.21	16.86	16.55
	R.H.	65.4	67.4	69.6	78.0
Zone IV	Maxi.	20.44	30.29	30.26	29.45
	Mini.	16.41	16.08	15.56	15.51
	R.H.	69.6	72.3	73.4	74.3
Zone V	Maxi.	30.86	30.52	31.38	30.81
	Mini.	14.38	13.17	13.72	13.72
	R.H.	68.3	68.9	66.4	66.1
Zone VI	Maxi.	29.85	29.38	28.81	27.75
	Mini.	12.21	11.21	11.18	11.19
	R.H.	75.4	77.3	76.9	75.1
Zone VIII	Maxi.	30.62	30.47	30.17	28.95
	Mini.	14.58	14.35	13.35	12.46
	R.H.	61.2	62.6	64.2	61.9
Zone IX	Maxi.	30.29	26.57	25.48	26.34
	Mini.	13.34	12.58	10.13	10.08
	R.H.	74.2	67.9	71.2	77.5
Zone XI	Maxi.	32.02	30.92	31.11	30.28
	Mini.	15.87	14.63	13.30	13.67
	R.H.	72.0	71.3	72.7	70.2
Zone XII	Maxi.	30.23	30.76	19.71	29.93
	Mini.	18.86	18.29	18.67	17.70
	R.H.	-	-	-	-
State	Maxi.	28.13	29.17	28.22	28.48
	Mini.	15.19	14.43	13.83	13.46
	R.H.	69.4	69.7	70.6	71.9

LVIII

ANNEXURE - I. 00

 The standard Weeks

Week No.	Dates		Weeks No.		Dates
1. January	-1-7		27. July		2-8
2.	8-14		28		9-15
3.	15-21		29		16-22
4.	22-28		30		23-29
5.	29-4	*	31		30-6
6. February	5-11		32	August	6-12
7.	12-18		33		13-19
8.	19-25		34		20-26
9.	26-4 *		35		27-2
10 March	5-11		36	September	3-9
11.	12-18		37		10-16
12	19-25		38		17-23
13	26-1		39		24-30
14 April	2-8		40	October	1-7
15	9-15		41		8-14
16	16-22		42		15-21
17	23-29		43		22-28
18	30-6		44		29-4
19 May	7-13		45	November	5-11
20	14-20		46		12-18
21	21-27		47		19-25
22	28-3		48		26-2
23 June	4-10		49	December	3-9
24	11-17		50		10-16
25	18-24		51		17-23
26	25-1		52		24-31

* In leap year the week No. 9 will be 26 February to 4 March i.e.
 8 days instead of 7.

@ Last week will have 8 days, 24 to 31 December.

Source :- Directorate of Agricultural Meteorology Poona.

Annexure 2.00

Area under crop: 1 taluk - and percentage NCA (Average 1966-69 to 1970-71)

Area in hectares.
— $\frac{1}{2}$ of NSA

Annexure 2.00 (Contd.)

Sr. No.	Taluka.	Group 'C'										Group 'D'												
		Wheat	Rice	Others	Total	Banana	Mango	Cocoanut	Sugarcane	Others	Group Total	Gross cro.	Net irrigated Area	Upred area	Area	% Area								
1.	Danta.	2187	11.4	4	-	448	2.3	1118	5.8	3757	39.5	-	-	-	107	0.6	204	1.0	311	1.6	23541	122.0		
2.	Hedbrahma.	2680	7.1	-	-	483	1.8	98	0.3	3161	8.7	-	-	-	277	0.8	345	0.9	624	4.7	30159	108.1		
3.	Iar.	7087	8.3	6	86	0.1	1365	1.6	8544	10.0	4	-	33	-	-	229	0.3	271	3.2	3037	3.5	95354	111.1	
4.	Vijaynagar.	1437	13.6	-	-	144	13.4	195	1.9	3046	28.9	-	-	3	-	-	98	0.9	222	2.8	383	3.7	13681	129.8
5.	Bhildia.	2054	9.6	-	-	843	24	293	0.9	4490	12.9	-	-	4	-	-	245	0.7	652	1.9	901	2.6	39254	112.9
6.	Kodasa.	3183	5.2	2	-	34	0.1	64	0.1	3283	5.4	-	-	18	-	-	3	-	1334	2.2	1355	2.2	65479	107.7
7.	MeghraJ	1209	3.7	13	-	336	1.0	74	0.3	1632	5.0	-	-	-	-	-	4	-	63	0.2	67	0.2	34407	104.9
8.	Halpur	776	3.6	11	-	130	0.6	59	0.3	976	4.5	-	-	-	-	-	62	0.3	62	0.3	22746	104.7	1090	5.0
9.	Bayad.	1668	2.7	1	-	21	0.1	136	0.2	1826	3.0	4	-	13	-	-	7	-	893	1.5	917	1.5	63870	104.0
10.	Balasinor	658	1.9	35	0.1	32	0.1	62	0.1	777	2.3	-	-	20	-	-	-	-	234	0.6	244	0.6	36156	102.4
11.	Lunavada.	2271	4.0	43	0.1	121	2.1	205	0.3	3730	6.5	-	-	-	-	-	31	0.1	116	0.2	147	0.3	60410	105.7
12.	Santrampur.	3689	5.3	830	0.7	7628	10.8	585	0.9	12432	17.7	-	-	-	-	-	41	0.1	261	0.4	302	0.5	82888	117.8
13.	Shebra.	600	2.0	5	-	452	1.5	100	0.3	1157	3.8	-	-	-	-	-	3	-	51	0.2	54	0.2	31448	104.3
14.	Jhalad.	4577	9.8	-	-	684	16.9	582	1.2	12143	26.9	-	-	-	-	-	6	-	1876	4.0	1882	4.0	58181	141.1
15.	Gadhra.	1428	2.3	43	0.1	1874	3.1	509	0.8	3869	6.3	-	-	-	-	-	23	-	187	0.3	210	0.3	66423	107.9
16.	Nevada Borda.	889	1.5	67	0.1	1810	3.1	24	-	2790	4.8	-	-	-	-	-	9	-	1397	2.4	1406	2.4	63257	108.6
17.	Latiwada.	1071	2.6	2	-	4688	10.9	76	0.1	5847	13.5	-	-	-	-	-	3	-	260	0.7	283	0.7	49453	144.4
18.	Doted.	4192	8.7	-	-	8532	17.6	1181	2.4	13905	28.7	-	-	-	-	-	-	-	2055	4.2	2055	4.2	6188	127.3
																						3121	6.4	

.....

.....

5000. 2382 6.3 43 0.1 2056 4.5 373 0.8 4854 10.7 1 - 5

60 0.1 726 1.7 792 1.8 50428 111.4 3954 8.7

ANNEXURE 2.02. **RESIDUAL, 30% - PADDY AND AREA UNIRRED CROP IN TAKAS AND PERCENTAGE AREA (AVERAGE 1968-1969 to 1970 - 1971).**
AREA IN HECTARES
% - % of ARA

GROUP 'A' SHORT DURATION KHARIF CROP ; GROUP 'B' LONG DURATION KHARIF CROP ; GROUP 'C' RABI CROP ;

GROUP 'D' OTHER CROPS

Sr. No.	Taluka	Ara	Area	GROUP 'A'												GROUP 'B'													
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1.	Bengalih	41152	7341	17.8	-	-	-	-	24	.2	2869	28.7	442	4.4	2659	26.3	7776	77.6	1086	10.9	-	-	840	8.4	38	0.4	1966	19.7	
2.	Tobhal	10017	1802	18.0	-	-	-	-	-	-	10209	21.1	7061	14.5	4369	8.9	32573	66.7	7619	15.6	-	-	1922	3.9	190	0.4	9731	19.9	
3.	Vara	48877	10834	22.2	-	-	-	-	-	-	285	0.6	408	0.8	768	1.6	29714	60.6	36187	73.8	7	-	-	2489	5.1	65	0.1	2561	5.2
4.	Aura	49011	5012	10.2	-	-	-	-	4	-	3401	6.9	527	1.1	2610	5.3	21609	44.1	2708	5.5	-	-	506	1.0	529	1.1	3743	7.6	
5.	Chitalal	148959	15067	30.8	-	-	-	-	-	-	3557	11.9	1859	6.2	4235	14.1	19698	65.7	1509	4.4	-	-	1175	3.9	59	0.1	2523	8.4	
6.	Vansda	29974	10044	35.5	3	-	-	-	-	-	91	0.2	29	0.1	20461	57.7	35868	66.2	1	-	-	-	3238	5.9	43	0.1	3282	6.0	
7.	Marsa	54211	15287	28.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
8.	Varan	55866	15910	37.8	-	-	-	-	-	-	1845	5.1	15755	43.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9.	Tabar	24884	9841	39.6	1	-	-	-	-	-	28	0.1	3	-	540	2.2	10413	41.9	-	-	-	-	178	0.7	95	0.4	273	1.1	
Average		38101	9904	26.0	1	-	35	0.1	3189	8.3	1628	4.3	8645	22.7	23402	61.4	1815	4.8	-	-	1489	3.9	145	0.4	3449	9.1			
of zone																													

GROUP 'C'

GROUP 'D'

Sr. No.	Taluka	Ara	Area	GROUP 'C'												GROUP 'D'																		
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27				
1.	Bengalih	41152	454 1.3	434	1.1	461	1.1	1943	4.7	-	-	25	0.1	-	-	57	0.1	4248	10.3	4530	10.5	45358	105.3	1089	2.6									
2.	Varan	54211	50.1	80	0.8	24	0.2	154	1.5	-	-	-	-	-	-	10	0.1	164	1.6	174	1.7	10070	100.5	90	0.9									
3.	Chitalal	148959	2.3	2447	5.0	367	0.8	404	0.8	4323	8.9	7	-	8	11	-	-	251	0.5	5502	11.3	5768	11.8	52395	107.3	2533	5.2							
4.	Marsa	54211	17	-	126	0.3	5289	11.0	5578	11.4	-	-	-	-	-	3	-	4844	9.9	4847	9.9	49173	100.3	124	0.3									
5.	Varan	5752	1.5	4786	9.8	291	0.6	364	0.8	6195	12.7	61	0.1	1774	3.6	-	-	551	0.7	20787	42.5	22975	46.9	54518	111.3	4145	8.5							
6.	Varan	6226	0.8	762	2.5	245	0.8	422	1.4	1655	5.5	30	0.1	244	0.8	-	-	90	0.5	7201	24.4	7665	25.6	51541	105.2	699	2.3							
7.	Varan	7.12	0.2	497	0.9	80	0.2	2507	4.6	3205	5.9	7	-	466	0.8	-	-	137	0.3	12237	22.6	12847	23.7	55202	101.8	376	0.7							
8.	Varan	8.283	0.8	3881	10.8	121	0.5	354	1.0	4639	12.9	108	0.3	3473	9.7	66	0.2	427	1.2	15602	43.5	19676	54.9	40683	115.4	5469	15.2							
9.	Varan	9.36	0.4	559	2.2	49	0.2	180	0.7	877	3.5	51	0.2	442	1.8	51	0.2	16	0.1	13605	54.7	14165	56.9	25728	105.4	707	2.8							
10.	Varan	9.53	0.9	1500	3.9	198	0.5	1123	3.0	3174	8.3	29	0.1	715	1.9	15	-	149	0.4	926	24.6	10272	27.0	40297	105.8	1692	4.4							

ANNEXURE 2.03. DEEP BLACK SOIL-ZONE

Area under crop in talukas and percentage NSA(Average 1968-69 to 1970-71)

Area in hectares
% - % of NSA

GROUP 'A' SHORT DURATION KHARIF CROP ; GROUP 'B' LONG DURATION KHARIF CROP ;
GROUP 'C' RABI CROP ; GROUP 'D' OTHER CROPS.

Sr. No.	Taluka	GROUP 'A'			GROUP 'B'			GROUP 'C'			GROUP 'D'																
		Ma. Area	Paddy Area	Bajri Area	Maize Area	Jowar Area	Groundnut Area	Others Area	Cotton Area	Tobacco Area	Rice Area	Other Area	Total Area														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
1	Amda	38018	575	1.5	164	0.5	9	-	4399	11.6	5	-	1573	4.1	6725	17.7	26999	71.0	4	-	250	0.6	23	0.1	27276	71.7	
2	Kerjan	51899	1932	3.7	186	0.4	18	-	3732	11.0	5	-	1302	2.6	9175	17.7	38086	73.4	17	-	941	1.8	99	0.2	39143	754	
3	Dharush	50807	724	1.4	11	-	-	-	5671	11.2	39	0.1	1435	2.8	7881	15.5	34231	67.4	86	0.2	787	1.5	110	0.2	35214	69.3	
4	Dabhol	52474	5188	9.9	815	1.5	8	-	5671	10.8	676	1.3	728	1.4	13086	24.9	34700	66.8	20	-	899	1.7	67	0.8	35686	68.0	
5	Bawheda	55426	4687	8.5	1671	3.0	216	0.4	6655	12.0	1941	3.5	2653	4.7	17803	32.1	30243	54.6	8	-	1406	2.5	56	0.1	31715	57.2	
6	Sikar	25870	1451	6.0	651	2.7	41	0.2	2481	10.4	87	0.4	479	2.0	5190	21.7	16319	68.3	12	0.1	527	2.2	88	0.4	16946	71.0	
7	Tegdi	47026	5781	15.4	996	2.3	11	-	5457	12.7	1502	3.5	1663	3.9	15410	35.8	26601	61.8	157	0.4	644	1.5	71	0.2	27473	63.9	
8	Mahabali	50655	1228	6.4	1547	8.1	66	0.3	3615	19.0	15	0.1	430	2.3	6901	36.2	9783	51.3	3	2	-	744	3.9	8	-	10557	55.2
9	Diaklesh	35132	485	1.5	8	-	3	-	9367	28.3	930	2.8	573	1.7	11366	34.3	15680	47.3	97	0.3	932	2.8	49	0.1	16758	50.5	
10	Jangala	49544	1913	5.9	837	1.7	229	0.4	12192	24.6	1521	3.1	2364	4.8	19066	37.5	25603	47.6	139	0.3	1837	3.7	99	0.2	25678	53.8	
11	Valla	49300	4266	10.5	142	0.3	118	0.3	8444	20.7	2506	6.1	883	2.2	16359	40.1	18184	44.6	8	-	777	1.9	82	0.2	19051	46.7	
12	Kagrol	60619	4526	7.5	50	0.1	59	0.1	17507	28.9	4645	7.7	4815	7.9	31602	52.2	18309	50.2	2	-	1792	3.0	156	0.2	20259	53.4	
13	Kankri	43802	5727	13.3	31	0.1	14	-	13650	31.8	4197	9.8	2121	4.9	25740	59.9	9653	22.5	6	-	741	1.7	107	0.2	10505	24.4	
14	Kamrej	31577	2495	7.9	2	-	2	-	4475	14.2	2368	7.5	2290	7.2	11632	36.8	10024	51.8	8	-	352	1.1	153	0.5	10537	53.4	
15	Bardoli	31562	6330	20.1	2	-	3	-	4022	12.7	1198	3.8	365	1.2	11920	37.8	5917	18.7	-	-	801	2.5	255	0.8	6953	22.0	
16	Falsam	17229	1770	10.2	16	0.1	-	-	2686	15.6	1326	7.7	156	0.9	5954	34.5	3071	17.8	-	-	346	2.0	81	0.5	3498	20.3	
17	Kambra	27668	5592	19.3	-	-	-	-	6144	22.2	5322	12.0	2891	10.5	17709	64.0	4172	15.1	13	-	545	2.0	160	0.6	4890	77.7	
18	(R.E.)	17614	3400	19.3	1	-	2	-	4189	23.8	1991	11.3	492	2.8	10075	57.2	3650	20.7	-	-	448	2.6	98	0.3	4156	23.6	
	Taled																										

Zone 38186 3213 8.4 396 1.0 44 0.1 6798 17.8 1571 4.1 151 4.0 13553 35.4 18290 47.9 32 0.1 821 2.2 94 0.2 19257 50.4

Annexure 2. 93 Contd.

Sr. No.	Wheat Area sq. km.	Maize Area sq. km.	Gram Area sq. km.	Others Area sq. km.	GROUP 'C'					GROUP 'D'					Grosscropped Area sq. km.					Net grossed area sq. km.			
					Total Area sq. km.	Grouptotal Area sq. km.	Banana Area sq. km.	Mango Area sq. km.	Cocoanut Area sq. km.	Sugarcane Area sq. km.	Others Area sq. km.	Grouptotal Area sq. km.	Grosscropped Area sq. km.	Net grossed area sq. km.									
1.	850	2.3	18	-	34	0.1	2281	6.0	3183	8.4	1	-	-	-	-	1171	3.1	38356	100.9	14993	79.4		
2.	1321	2.5	149	0.3	45	0.1	444	0.9	1959	3.8	10	-	8	-	-	4	-	2861	5.5	2883	5.5		
3.	1132	0.8	140	0.1	51	0.1	3658	7.2	4981	9.8	156	0.3	20	-	-	7	-	2800	5.5	2983	5.8		
4.	1758	3.4	37	0.1	95	0.2	85	0.1	1973	3.8	2	-	22	0.1	-	-	18	-	3690	7.0	3732	7.1	
5.	802	1.4	85	0.2	41	0.1	85	0.2	1013	1.8	219	0.5	35	0.1	-	-	75	0.1	5935	10.7	6264	11.4	
6.	565	2.4	52	0.2	23	0.1	78	0.3	718	3.0	18	0.1	14	0.1	-	-	-	-	1610	6.7	1642	6.9	
7.	803	1.9	85	0.2	325	0.7	53	0.1	1264	2.9	6	-	84	0.2	-	-	10	-	1389	3.2	1489	3.4	
8.	41	0.2	22	0.1	12	0.1	7	-	82	0.4	1	-	1	-	-	-	-	-	1660	8.8	1662	8.8	
9.	829	2.5	103	0.3	63	0.2	397	1.2	1992	4.2	76	0.2	201	0.6	-	3	-	3554	10.8	3834	11.6		
10.	346	0.7	248	0.5	34	0.1	168	0.3	796	1.6	102	0.2	51	0.1	-	5	-	4317	8.7	4455	9.0		
11.	294	0.7	312	0.8	27	0.1	108	0.2	741	1.8	11	-	16	0.1	-	59	0.1	5070	12.4	5156	12.6		
12.	506	0.8	155	0.3	83	0.1	169	0.3	914	1.5	4	-	-1	-	-	26	-	8410	13.9	8441	13.9		
13.	608	1.4	1548	3.6	144	0.3	168	0.5	2488	5.8	52	0.1	9	-	-	14	0.3	6539	15.2	6714	15.2		
14.	630	2.0	1457	4.6	24	0.1	434	1.4	2545	8.1	2784	8.8	121	0.4	-	-	1665	5.9	4052	12.8	8802	27.9	
15.	878	2.8	4182	13.2	22	0.1	273	0.9	5355	17.0	830	2.6	210	0.7	-	-	3738	11.8	7941	25.2	12719	40.3	
16.	409	2.4	1092	6.3	28	0.2	220	1.3	1749	10.2	2571	14.9	252	1.5	-	-	1011	5.8	3838	22.3	7672	44.5	
17.	401	1.5	2195	7.9	98	0.4	259	0.9	2953	10.7	46	0.1	131	0.5	-	-	610	2.2	4295	15.5	5081	18.3	
18.	132	0.7	1513	8.6	35	0.2	106	0.6	1786	10.1	48	0.3	6	-	-	297	1.7	3120	17.7	3471	19.7		
	2000	1.8	744	1.9	66	0.2	501	1.3	1994	5.2	285	1.0	65	0.2	-	-	436	1.1	4013	10.5	4899	12.8	
																				39663	105.8	5841	15.3

Average

Annexure 2.A

Sandy loam Soil- Bajri- Tobacco- Zone

Area under crop in talukas and percentage NSA (Average 1968-69 to 1970-71)

Area in hectares
% - % of NSAGroup A short duration Kharif crop; Group B long duration Kharif crop;
Group C Rabi crop; Group D other crops.

Group 'A'

Sl. No.	Taluka.	NSA Area	Paddy Area	Bajri Area	Maize Area	Jowar Area	Groundnut Area	Others Area	Total Area	Group A Area	Group B Area	Group C Area	Group D Area	Others Area	Total Area	Group A %	Group B %	Group C %	Group D %		
1. Anand.	55912	7120	12.7	15201	27.2	4	-	492	0.9	119	0.2	9624	17.2	32560	58.2	1253	2.2	21382	38.2	1283	2.3
2. Baroda.	48436	6581	13.6	14101	29.1	7	-	1404	2.9	3	-	12650	25.9	34666	71.5	362	0.7	10339	21.6	1539	3.2
3. Patelad.	41147	6700	16.3	20957	50.9	-	-	671	1.6	-	-	7551	18.4	35879	87.2	780	1.9	6189	15.0	1054	2.6
4. Mehsad.	55451	11461	20.7	25147	43.5	47	0.1	1115	2.0	442	0.8	9011	16.2	46223	83.3	1039	1.9	8047	14.5	1393	2.5
5. Thara.	52183	8110	15.6	10614	20.1	1328	2.5	3230	6.2	1019	2.0	6059	9.7	29289	56.1	11094	21.3	10124	19.4	1108	2.1
6. Savli.	62356	5440	8.7	4733	7.6	92	0.2	8788	9.3	2271	3.6	5611	9.0	23935	38.4	26870	42.8	9564	15.3	633	1.1
7. Padra.	40589	3306	8.1	4733	11.7	71	0.2	295	6.4	2	-	6060	14.9	16767	41.3	16142	39.7	2628	7.2	200	5.4
8. Vadodara.	50157	5236	10.5	3784	7.5	160	0.3	5188	10.3	142	0.3	4104	8.2	18634	37.1	15925	27.7	6038	12.0	1369	3.7
9. Kalol. (Pals.)	27322	5422	19.8	4794	17.5	1446	5.3	403	3.3	7631	27.5	4269	15.6	24365	59.9	3263	11.9	445	1.6	876	2.1
10. Ahmedabad.	11051	1462	13.2	2557	23.1	4	-	1037	9.4	9	0.1	2453	22.2	7622	68.0	485	4.4	2	-	126	1.2
(G.I.T.)																				49	0.5
11. Dabhol.	51467	14172	27.5	15884	30.9	11	-	6568	12.8	43	0.1	4670	9.1	41348	80.3	6459	12.6	53	0.1	736	2.4
12. Ahmeda- bad.	39838	10673	26.8	16011	42.5	4	-	337	0.8	108	0.3	8506	21.4	36533	91.7	1110	2.8	501	1.3	1721	4.3
13. Natar.	44468	17557	30.5	7895	17.1	11	-	2080	4.7	7	-	5502	12.3	32752	73.6	4296	9.5	943	2.1	1322	3.0
14. Kapadvanj.	77735	4635	6.0	27439	35.3	4012	5.1	982	1.3	15642	20.0	6194	8.3	59204	76.0	15620	21.4	828	0.7	1066	1.3
15.																				1084	1.4
																				3937	24.8
																				316	31.6

LXV

47014 7706 16.4 12283 26.3 514 1.2 2214 4.9 1946 4.1 6533 12.9 31294 66.8 7746 16.6 5512 11.8 2188 21.6 333 0.8 1839 31.6

.....

ପାତ୍ରବିଦ୍ୟା

1. ग्रन्थ नाम समीक्षा - भास्त्र - विद्युत - व्याप-

Area under crop in talukas and percentage N.S. (average 1968-69 to 1970-71).

Area in pastures
% - % of NSM

Group 'A'										Group 'B'										Cotton			Tobacco			Mtr			Others			Group Total				
Sr. No.	Paddy			Bajri			Maize			Jowar			Groundnut			Others			Group Total			Cotton			Tobacco			Mtr			Others			Group Total		
	Area %	Area %	Area %	Area %	Area %	Area %	Area %	Area %	Area %	Area %	Area %	Area %																								
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.							

Group A short duration Kharif crop; Group B long duration Kharif crop; Group C kabi crop; Group D other crops.

Sr. No.	Area 3.	Area 4.	Area 5.	Area 6.	Area 7.	Area 8.	Area 9.	Area 10.	Area 11.	Area 12.	Area 13.	Area 14.	Area 15.	Area 16.	Area 17.	Area 18.	Area 19.	Area 20.	Area 21.	Area 22.	Area 23.	Area 24.	Area 25.	Area 26.	Area 27.	Area 28.	Group 'C'		Group 'D'	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.			
1.	Mahesna.	7713	11.7	2	-	28	0.04	9091	13.7	18834	25.4	-	-	34	0.1	-	-	8	-	1301	2.0	1335	2.1	80005	120.9	24380	36.8			
2.	Vijaygarh.	5056	12.1	8	-	-	10501	26.1	15565	37.2	-	-	44	0.1	-	-	-	-	953	2.2	996	2.3	54491	130.1	17917	42.8				
3.	Vijapur.	18870	21.8	98	0.1	-	-	8301	10.1	25269	32.6	-	-	734	0.9	-	-	9	-	3154	4.1	3888	5.0	102027	131.8	36678	47.4			
4.	Kadi.	6566	9.7	-	-	32	0.04	1362	2.0	7960	11.7	-	-	100	0.1	-	-	4	-	1073	1.6	1177	1.7	75117	110.6	16991	23.7			
5.	Kalid(Meh)	6554	16.2	-	-	-	-	1657	4.1	8211	20.3	-	-	71	0.1	-	-	-	-	1284	3.2	1355	3.3	47425	117.0	15768	38.9			
6.	Praanti J.	4083	6.6	1	-	269	0.4	444	0.7	4797	7.7	-	-	166	0.3	-	-	1	-	1355	2.2	1522	2.5	67518	108.4	7895	12.2			
7.	Dengam.	3577	7.3	3	-	4	-	589	1.2	4173	8.5	-	-	41	0.1	-	-	3	-	737	1.5	781	1.6	54686	112.0	10567	21.6			
8.	Hinalnagar.	3457	6.7	-	-	84	0.2	76	0.1	3617	7.0	-	-	25	-	-	-	22	-	839	1.7	886	1.7	56029	108.0	9090	-			
9.	Chansara.	1840	2.6	-	-	48	0.1	9270	12.9	11158	15.6	-	-	-	-	-	-	-	-	1635	2.3	1655	2.3	75684	105.7	12154	17.0			
Zone.		6191	10.6	12	-	52	0.1	4588	7.8	10843	18.3	-	-	134	0.2	-	-	5	-	1309	2.3	1508	2.5	63108	116.0	16693	28.4			

Average 2.06

Area under crop in talukas and percentage NSA (Average 1968-69 to 1970-71).

Area in hectares
% - % of NSA

Group A short duration Kharif crop; Group B long duration Kharif crop;
Group C Rabi crop; Group D other crops.

Group 'A'

Sr. No.	Taluka.	NSA	Paddy			Bajri			Maize			Jowar			Groundnut			Others			Group Total			Cotton			Tobacco			Others			Group Total		
			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.						
1.	Lathpat.	8818	-	-	3484	39.5	-	133	-	0.3	733	8.3	280	3.3	4280	48.0	8737	98.1	3	-	-	-	-	-	-	-	41	0.5	44	0.5					
2.	Nakhrana.	49435	-	-	8992	18.3	-	2570	5.2	14544	28.4	22358	45.2	48598	98.3	625	1.3	-	-	-	-	-	-	-	-	265	0.5	890	1.8						
3.	Abda.	36314	-	-	15737	43.3	-	7591	20.9	1389	3.9	10522	28.0	35249	97.1	580	1.6	-	-	-	-	-	-	-	-	200	0.5	780	2.1						
4.	Bhuj.	76174	4	-	12890	17.1	47	0.1	10363	13.8	5160	6.9	42263	56.2	70727	94.1	3497	4.6	-	-	-	-	-	-	-	237	0.4	3794	5.0						
5.	Wao.	90379	-	-	59772	66.1	-	-	5139	5.7	-	-	23168	25.6	88079	97.4	1	-	-	-	-	-	-	-	18	-	747	0.8							
6.	Tharad.	111381	-	-	73115	65.5	-	-	5682	5.1	-	-	32100	28.7	110879	98.3	-	-	-	-	-	-	-	-	6	-	2002	1.8							
7.	Deodara.	86002	-	-	51280	59.6	-	-	10512	12.2	5	-	20165	23.5	81962	95.3	822	1.0	-	-	-	-	-	-	-	183	0.2	1745	2.0						
8.	Dhanera.	86788	-	-	48141	55.5	148	0.2	13249	15.3	127	0.1	21974	24.8	83339	96.0	5	-	-	-	-	-	-	-	108	0.1	236	0.3							
9.	Deesa.	114957	31	-	59615	51.9	39	-	20678	18.0	99	0.1	28781	25.9	110243	95.9	33	-	-	-	-	-	-	-	150	0.1	1008	0.9							
10.	Kankrej.	685560	-	-	30808	44.3	-	-	13608	19.5	88	0.1	7298	20.5	51783	74.4	3068	4.4	-	-	-	-	-	-	-	26	-	865	1.3						
11.	Palanpur.	76205	281	0.3	28571	37.5	4405	5.8	16526	21.7	523	0.7	21457	28.2	71781	94.2	413	0.5	283	0.4	513	0.7	624	0.8	1843	2.4									
12.	Vedagam.	38956	387	1.0	13824	34.6	324	0.8	9643	24.1	816	2.0	10341	27.4	35935	89.9	13	-	32	0.1	148	0.4	320	0.8	613	1.3									
13.	Patan (Keh).	80956	225	0.4	2830	34.9	-	-	24080	28.7	796	1.0	9879	12.2	63354	78.2	3095	3.8	145	0.2	592	0.7	2337	3.7	6769	8.4									
14.	Siddhpur.	49254	-	-	18944	38.5	5	-	15767	32.0	169	0.3	7548	12.5	42428	86.1	58	0.1	261	0.5	1124	2.3	1546	3.2	2889	6.1									
15.	Kheralu.	67073	282	0.4	22580	33.7	821	1.2	16334	24.4	5697	8.5	7719	11.5	53423	79.7	935	1.4	103	0.1	1580	2.4	3796	5.7	6424	9.6									
16.	Mandvi.	52728	-	-	9764	49.5	98	0.2	11675	23.6	11675	22.1	12335	24.1	46217	88.8	5840	11.1	-	-	-	-	-	-	-	100	0.2	5840	11.3						
17.	Mundra.	42317	-	-	4997	11.8	-	-	14986	35.4	1056	2.5	14056	38.2	35095	82.9	7828	18.5	-	-	-	-	-	-	-	62	0.2	7880	18.7						
18.	Anjar.	89124	-	-	9116	13.2	-	-	23672	34.3	1366	2.0	24999	31.8	56153	81.3	12873	18.2	-	-	-	-	-	-	-	430	0.6	13003	18.8						
19.	Blachan.	88164	-	-	27842	31.6	-	-	12047	13.7	224	0.2	59661	40.8	76074	86.3	10270	11.6	-	-	-	-	-	-	-	2016	2.3	12286	13.9						
20.	Repar.	97239	-	-	39537	40.7	-	-	16496	17.0	509	0.5	27930	28.7	84472	86.9	9999	10.3	-	-	-	-	-	-	-	2839	2.6	12538	12.9						
21.	Santthalpur.	58865	-	-	27959	47.5	-	-	4268	7.2	30	0.1	15549	28.8	47806	81.2	5201	8.8	-	-	-	-	-	-	-	1	-	2601	6.1						
22.	Redharpur.	43165	-	-	19316	44.8	-	-	5853	13.6	159	0.4	7220	16.7	32577	75.5	5160	12.0	-	-	-	-	-	-	-	87	0.2	1422	3.3						
23.	Harij.	23603	-	-	9565	32.3	-	-	7236	24.4	.730	2.5	2790	9.4	20321	68.6	4451	16.0	-	-	-	-	-	-	-	135	0.6	801	2.7						

Zone. 66252 56 0.1 27137 40.9 261 0.4 11718 17.7 1976 3.0 17802 26.9 58960 89.0 3238 4.9 36 0.1 204 0.3 1200 1.8 4678 7.1

Group 'B'

Zone. 66252 56 0.1 27137 40.9 261 0.4 11718 17.7 1976 3.0 17802 26.9 58960 89.0 3238 4.9 36 0.1 204 0.3 1200 1.8 4678 7.1

Group 'C'

No.	Sr. No.	Taluka.	Meat Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Total Area	Gross Sown Area	Net Irrigated Area						
1.	2.		3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	
1.	Lambat.	93	1.0	4	-	-	-	-	17	0.2	110	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.	Nalnara.	4017	8.2	4	-	-	-	-	1541	3.1	5582	11.3	9	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.	Abadga.	488	1.3	4	-	-	-	-	356	1.0	872	2.4	1	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.	Bhuj.	3309	4.5	20	-	-	-	-	1229	1.7	4688	6.2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.	Nao.	438	0.5	-	-	-	-	-	126	0.2	594	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.	Tharad.	3685	3.6	2	-	-	-	-	4274	3.8	8284	7.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.	Deodar.	5060	5.9	7	-	-	-	-	5002	5.8	10103	11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.	Dhamera.	5270	6.1	38	-	-	-	-	6071	7.0	11379	13.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.	Deesia.	7922	6.9	116	0.1	16	-	-	13802	12.0	21856	19.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.	Kanira J.	7531	10.9	-	64	0.1	9731	13.9	17326	21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.	Palampur.	8117	10.7	86	0.1	229	0.3	10030	13.1	18462	21.2	-	-	65	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.	Hedgew.	6790	14.5	11	-	89	0.2	5917	14.8	11157	20.5	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.	Patan (Jeh)	6434	8.0	-	-	-	-	-	16478	20.4	22961	28.4	-	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.	Siddhpur.	4351	8.8	-	-	-	-	-	9341	19.0	13692	27.8	-	73	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.	Kerala.	5644	8.4	217	0.3	102	0.2	7935	11.8	13868	20.7	-	119	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.	Mandvi.	898	1.7	-	-	-	-	-	191	0.3	1089	2.0	39	0.1	167	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-
17.	Mundra.	224	0.5	325	0.8	-	-	-	199	0.5	768	1.8	54	0.1	47	0.1	59	0.2	1	-	-	-	-	-	-	-	-	-	
18.	Anjar.	888	1.3	-	-	-	-	-	785	1.1	1673	2.4	41	0.1	21	-	2	-	-	-	-	-	-	-	-	-	-	-	-
19.	Bhachau.	1079	1.2	-	-	-	-	-	22	0.1	298	0.3	1399	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.	Roper.	2812	2.7	-	-	-	-	-	50	-	223	0.2	2885	2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.	Sonthalpur.	1489	2.5	-	-	-	-	-	68	0.1	500	0.9	207	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.	Redhapur.	3008	7.0	-	-	-	-	-	267	0.6	1218	2.8	4473	10.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.	Harlij.	2144	7.3	-	-	-	-	-	53	0.2	2645	8.9	4842	16.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Zone. 3521 5.3 36 0.0 42 0.1 4287 6.4 7856 11.8 6 - 18 - 10 - 92 0.1 1084 1.7 1210 1.8 7394 109.7 9797 14.8

.....

Area under crop in talukas and percentage NSA (Average 1968-69 to 1970-71).

**Area in hectares
%** $\frac{\%}{\text{of NSA}}$

**Group A short duration Kharif crop; Group B long duration Kharif crop
Group C Rabi crop; Group D other crops.**

Group 'A'

Sr. No.	Taluka	NSA	Paddy	Bajri	Maize	Jowar	Groundnut	Others	Group Total	Cotton	Tobacco	Tur	Others	Group Total												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1. Sami.		94717	-	18130	19.1	-	-	23855	25.2	123	0.1	1260	1.3	43368	45.7	36355	38.6	-	-	22	628	0.7	37185	39.3		
2. Desada.		107173	106	0.1	10309	9.6	-	-	25546	23.9	184	0.2	198	1.0	37253	34.8	69582	64.9	-	-	-	11	68583	64.9		
3. Virangam.		141833	1374	1.0	19066	15.4	-	-	31050	21.9	1985	1.4	6550	4.6	60025	42.3	75930	53.5	10	55	648	0.5	76643	54.0		
4. Malva. (M)		46776	-	-	10428	20.9	-	-	13249	26.6	3323	6.7	135	0.3	27130	54.6	22528	45.3	-	-	-	1	22529	45.3		
5. Halvad.		79856	-	-	20320	25.5	-	-	16236	20.3	2338	2.9	2719	3.4	41613	52.1	38198	47.8	-	-	-	5	38203	47.8		
6. Dhruvadara.		89509	-	-	19537	21.8	2	-	20592	28.0	2329	2.6	3472	3.9	45922	51.3	43808	48.9	-	-	-	20	0.1	43808	49.0	
7. Lalitpur.		57284	74	0.1	8208	14.3	-	-	13247	23.1	478	0.9	988	1.7	22995	40.1	33396	58.3	-	-	-	4	33400	58.3		
8. Sanand.		63220	10862	17.2	4453	7.1	-	-	8801	13.9	86	0.1	6136	9.7	30338	43.0	24680	39.1	1083	1.7	70	0.1	101	0.1	25944	41.0
9. Lumbdi.		118806	309	0.2	18607	15.7	-	-	24265	20.4	3406	2.9	6211	5.2	52789	44.4	55060	46.3	-	-	-	84	0.1	55144	46.4	
10. Dhadka.		127528	5780	6.9	7376	5.7	-	-	16534	13.0	183	0.1	8196	6.4	40878	32.1	50735	39.8	57	0.1	270	0.2	536	0.4	51568	40.5
11. Dhandhuka.		164891	53	1092	10.3	3	-	-	30541	18.5	3568	2.2	21874	13.2	272831	44.2	58566	35.5	-	-	4	202	0.1	58772	35.6	
12. Kambhat.		67880	7678	11.3	15251	22.5	-	-	5364	7.9	-	-	8217	12.1	36510	53.8	10232	15.1	148	2.2	1584	2.3	314	0.5	13665	20.1

Group 'B'

Zone.	96874	2436	25	14048	14.5	-	-	19107	19.7	1501	1.6	5555	5.7	42667	44.0	43276	44.7	218	0.2	167	0.2	213	0.2	43874	45.3
-------	-------	------	----	-------	------	---	---	-------	------	------	-----	------	-----	-------	------	-------	------	-----	-----	-----	-----	-----	-----	-------	------

Annexure 2, 67 Contd.

Group 'C'

Group 'D'

Sr. No.	Taluka.	Wheat	Maize	Gram	Others	Group Total		Banana	Mango	Coconut	Sugarcane	Others	Group Total		Gross Sown Area	Net Irrigated Area			
						Area	%						Area	%	Area	%			
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
1.	Soni.	13053	13.8	-	-	716	0.8	1086	1.1	14855	15.7	-	-	-	-	-	464	0.5	
2.	Dasada.	1992	1.8	-	-	171	0.2	67	0.1	2230	2.1	-	-	-	-	-	10976	101.3	
3.	Virkangam.	5667	4.0	-	-	219	0.2	617	0.4	6503	4.6	-	-	-	-	-	350	0.3	
4.	Malia.(M)	395	0.8	-	-	162	0.3	51	0.1	608	1.2	-	-	-	-	-	25	0.1	
5.	Halvad.	1721	2.2	-	-	7	-	62	0.1	1790	2.3	-	-	-	-	-	2	13	
6.	Dhrangadhra.	851	1.0	-	-	57	-	193	0.2	1101	1.2	-	-	-	-	-	90851	101.5	
7.	Lakhtar.	861	1.5	-	-	24	0.1	9	894	1.6	-	-	-	-	-	-	30	0.1	
8.	Sanand.	6326	10.0	-	-	25	0.1	260	0.4	6611	10.5	-	-	33	0.1	-	978	1.5	
9.	Limbadi	10837	9.2	-	-	143	1.2	149	0.1	12428	10.5	-	-	-	-	-	7	3	
10.	Dholka.	37760	22.6	-	-	612	0.5	1603	1.2	39975	31.3	26	194	0.1	-	210	0.2	591	0.5
11.	Dhadhuka.	30035	18.2	-	-	1470	0.9	2896	1.8	34401	20.9	-	-	-	-	-	31	30	
12.	Khambhat.	18925	27.9	89	0.1	234	0.3	531	0.8	19779	29.1	21	11	-	-	-	34	0.1	
Zone.		10702	11.1	8	-	428	0.5	627	0.6	1765	12.2	4	-	10	-	-	24	-	
																	279	0.3	
																	327	0.3	
																	98613	101.8	
																	7059	7.3	

XXXXX

Area under crop in talukas and percentage NSA (Average 1968-69 to 1970-71)

Sr. No.	Taluka	NSA	GROUP 'A'			GROUP 'B'			GROUP 'C' Babi Crop			GROUP 'D' Other Crops			Group 'J'																							
			Paddy Area %			Bajri Area %			Maize Area %			Jowar Area %			Groundnut Area %			Others Area %			Group total Area %			Cotton Area %			Tobacco Area %			Tur Area %			Others Area %			Group total Area %		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27									
1.	Muld	55719	1	-	16494	29.6	1	-	7465	13.4	5424	9.7	6076	10.9	35461	63.6	19589	35.2	-	-	-	-	6	-	19595	35.2												
2.	Wadhwani	61695	9	-	12717	20.6	-	-	10126	16.4	6357	10.3	1542	2.5	30751	49.8	31529	51.1	-	-	-	-	4	-	31533	51.1												
3.	Sayla	55082	2	-	18775	34.1	-	-	9884	17.9	5955	10.8	6271	11.4	40887	74.2	12174	22.1	-	-	-	-	24	0.1	12198	22.2												
4.	Jodha	53345	11	-	12753	23.9	-	-	13330	25.0	12608	23.7	1896	3.5	40598	76.0	6983	13.1	-	-	-	-	147	0.3	7130	13.4												
5.	Norvi	122992	37	0.1	28527	30.0	11	-	24376	19.8	33117	26.9	1075	0.9	86943	70.7	35314	28.7	-	-	-	-	39	-	35353	28.7												
6.	Vankarmer	54432	69	0.1	16627	30.5	15	-	9666	17.8	18371	25.8	2145	3.9	46893	86.1	5882	10.8	-	-	-	-	38	0.1	5920	10.9												
7.	Jasdan	86012	258	0.3	19100	22.2	29	-	11539	13.4	38923	45.3	1515	1.7	7134	82.9	6166	9.5	-	-	-	-	12	-	8178	9.5												
8.	Gadhada	62804	59	0.1	21141	35.7	8	-	9744	15.5	15887	25.3	2266	3.6	49105	78.2	9404	15.0	-	10	10	-	-	973	1.5	10387	16.5											
9.	Lathi	51863	96	0.2	11796	22.7	-	-	8380	16.5	24369	47.0	1163	2.3	46004	88.7	4135	8.0	-	-	-	-	79	1.4	4894	9.4												
10.	Umara	26754	32	0.1	10289	38.4	-	-	4163	15.6	5914	22.1	886	3.3	21284	79.5	4481	16.7	-	-	-	-	361	1.4	4842	18.1												
11.	Boted	52964	24	0.1	19667	37.1	11	-	8628	16.3	9917	18.7	4645	8.8	42892	81.0	7487	14.1	-	-	-	-	2	-	226	0.6	7815	14.7										
12.	Lilia	31945	14	0.1	11045	34.6	8	-	5444	17.0	8664	27.1	806	2.5	25981	81.3	4403	13.8	-	-	-	-	275	0.8	4678	14.6												
13.	Garidhar	59025	35	0.1	12787	32.8	4	-	6414	16.4	15857	40.6	726	1.9	35823	91.8	2623	6.7	-	-	-	-	221	0.6	2850	7.3												
14.	Bhibor	46307	101	0.2	15156	32.8	1	-	7842	16.9	10358	22.3	1482	3.2	34922	75.4	4286	9.2	-	-	-	-	286	0.6	4552	9.8												
15.	Palitana	42022	64	0.1	14271	34.0	10	-	9867	14.0	12307	29.3	1266	3.9	35785	80.4	2896	6.9	-	-	-	-	168	0.4	3064	7.5												
16.	Dhogha	30041	66	0.2	8751	29.1	-	-	6381	21.2	9794	32.6	1402	4.7	26374	87.8	46	0.2	-	-	-	-	219	0.7	265	0.9												
17.	Dhavngar	35293	41	0.1	8095	22.9	-	-	14617	41.4	4957	14.1	920	2.6	28630	81.1	1385	3.9	-	-	-	-	29	0.1	1425	4.0												
18.	Vallabhpur	39996	6	-	7749	19.4	1	-	17308	43.3	935	2.3	2377	5.9	28376	70.9	4923	12.3	-	-	-	-	191	0.5	5114	12.8												
19.	Upliota	59098	308	0.6	4659	8.5	24	0.1	1666	3.0	35472	64.4	1421	2.6	43590	79.2	9440	17.1	-	-	-	-	5	-	9445	17.1												
20.	Dhoraji	39227	444	1.2	2542	6.1	290	0.7	743	1.9	29005	75.9	712	1.9	35536	87.7	3916	10.3	-	-	-	-	9	-	3925	10.3												
21.	Kutiyana	39351	142	0.4	3244	9.1	2	-	8610	24.0	16205	45.2	62	0.2	28365	78.9	5551	15.5	-	-	-	-	97	0.2	5618	15.7												
22.	Nanardar	48190	564	0.8	2283	4.7	31	-	2773	5.8	32205	67.5	2534	5.3	40496	84.1	5251	10.8	1	-	-	-	20	0.1	5233	10.9												
23.	Vanthali	31120	572	1.8	1907	6.1	106	0.3	1274	4.1	20143	64.7	32	0.1	24034	77.2	3222	10.4	-	-	-	-	29	0.1	3251	10.4												
24.	Jungalik	37492	903	2.4	3059	8.2	292	0.8	1514	4.0	24761	66.0	759	2.0	38288	85.5	4595	12.3	-	-	-	-	4604	12.3														
25.	Keshod	40173	527	1.3	966	2.4	35	0.1	1179	2.9	32889	81.9	3512	8.3	38908	96.8	1458	3.6	-	-	-	-	44	0.1	1502	3.7												
26.	Nendaria	23420	388	1.4	526	2.2	99	0.4	15	0.1	18231	77.8	749	3.2	19946	85.2	914	3.9	-	-	-	-	10	-	924	3.9												
27.	Visavadar	30154	1171	2.3	4762	9.5	125	0.3	2952	5.9	35433	70.6	356	0.7	44799	89.3	2097	4.2	-	-	-	-	151	0.3	2248	4.5												
28.	Khasibalia	74192	94	0.1	14077	19.0	10	-	15471	20.9	42785	57.6	712	1.0	17149	98.6	597	0.8	-	-	-	-	716	0.9	1313	1.7												
29.	Palpur	59699	115	0.2	9828	16.5	6	-	14553	24.4	55300	55.8	704	1.2	38206	98.1	367	0.6	-	-	-	-	128	0.2	495	0.8												
30.	Jamnagar	64729	245	0.4	9826	15.2	250	0.4	23001	35.5	24852	38.4	4888	7.5	62062	97.4	283	0.4	-	-	-	-	69	0.1	592	0.5												

Annexure 2.08 contd.

...2... ..

Sr. No.	Taluka RAI	Paddy Area ¹	Bajri Area ²	Maize Area ³	Jowar Area ⁴	Groundnut Area ⁵	Others Area ⁶	Group total Area ⁷		Group total Area ⁸		Group total Area ⁹		Group total Area ¹⁰			
								Area ¹	Area ²	Area ³	Area ⁴	Area ⁵	Area ⁶	Area ⁷	Area ⁸		
1	2	3	4	5	6	7.	8	9	10	11	12	13	14	15	16	17	
31. Dharol	39106	32	0.1	6898	17.7	2	-	11265	28.8	18001	46.0	1193	3.0	37391	95.6	1050	2.6
32. Bhavna	43366	203	0.5	4416	10.2	-	-	3261	7.5	34037	78.5	489	1.1	42406	97.8	827	1.9
33. Jamodhpur	59786	328	0.6	5975	10.0	205	0.3	2106	3.5	45954	76.9	430	0.7	54998	92.0	2534	4.2
34. Kalavad	79650	376	0.5	11488	14.4	68	0.1	7601	9.5	56936	71.5	797	1.0	77266	97.0	1128	1.4
35. Pancheri	42865	88	0.2	7583	17.7	16	-	7526	17.6	25524	59.6	275	0.6	41012	95.7	1563	3.6
36. Jodhba	29940	248	1.0	3122	13.1	35	0.1	3329	13.9	15825	66.1	186	0.8	22745	95.0	529	2.2
37. Rajkot	61559	253	0.4	10275	16.7	177	0.3	11194	18.2	33443	54.3	1115	1.8	56457	91.7	2982	4.8
38. Chotila	54064	17	-	21674	40.1	5	-	6061	11.2	9283	17.2	676812.5	43808	81.0	5532	6.5	
39. Kothle-	31515	382	1.2	2446	7.8	19	0.1	3793	12.0	20558	65.2	219	0.7	27417	87.0	2230	7.1
Sangani																	
40. Babra	57754	199	0.3	6465	11.3	103	0.2	9680	16.9	33193	57.9	408	0.7	50048	87.3	3969	7.0
41. Arroli	68990	271	0.4	16607	24.1	305	0.4	8731	12.6	37157	53.9	1414	2.1	6485	93.5	2508	3.3
42. Dhami	69707	450	0.6	16737	24.0	362	0.5	6705	9.6	32206	46.2	2404	3.5	58864	84.4	1363	2.0
43. Kundla	85401	99	0.1	24918	29.9	50	0.1	6491	7.8	36123	43.3	3459	4.1	71140	85.3	5194	6.2
44. Khembha	25550	41	0.2	6294	24.6	15	0.1	1120	4.4	11792	46.2	614	2.4	19876	77.9	731	2.9
45. Kandora	38738	413	1.1	3250	8.4	19	-	2095	5.3	30203	78.0	189	0.5	36169	93.3	1914	5.0
46. Godal	85704	1026	1.2	6485	7.8	52	0.1	4048	4.9	60085	72.1	2729	5.3	74425	89.4	6192	7.4
47. Jetpur	51222	952	1.9	5871	11.5	116	0.2	2867	5.6	37243	72.7	668	1.3	47717	93.2	2762	5.2
48. Kunikvar	70055	898	1.3	7203	10.3	143	0.2	7156	10.2	30676	72.4	866	1.2	66942	95.6	2587	3.4
49. Rheeza	34547	602	1.7	3838	11.1	133	0.4	2093	6.1	25777	74.6	338	1.0	32781	94.9	760	2.2
50. Taliola	27058	388	1.7	2061	8.9	10	-	770	3.3	20423	88.6	290	1.3	23944	103.8	577	2.5

Area acre 2.48 Centr.3...

Sr. No.	West Area	Wet Area	Gram Area	Others Area	Group 'C'										Group 'D'										Group total			Gross sown area %	Net irrigated area %
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1.	1044	1.9	-	-	421	0.7	189	0.3	1654	2.9	-	-	-	-	-	-	1	-	1319	2.4	1320	2.4	58030	104.1	6122	11.0	8.0		
2.	794	1.3	-	-	125	0.2	106	0.2	1025	1.7	-	-	-	-	-	-	3	-	3	-	6	-	63315	102.6	4916	4.5	4.5		
3.	843	1.5	-	-	12	-	146	0.3	1001	1.8	-	-	-	-	-	-	4	-	2135	3.9	2139	3.9	56225	102.1	2485	16.7	16.7		
4.	6507	12.2	-	-	291	0.5	431	0.8	7239	13.5	5	-	4	-	1	-	408	0.8	3	-	421	0.8	55378	105.8	2323	4.7	4.7		
5.	2705	2.2	-	-	188	0.2	470	0.3	5503	2.7	-	-	-	-	-	-	360	0.3	46	-	406	0.3	126005	102.4	8299	6.7	6.7		
6.	2643	4.9	-	-	45	0.1	787	1.4	3475	6.4	-	-	-	-	-	-	154	0.3	52	0.1	206	0.4	56494	103.8	9038	16.6	16.6		
7.	5267	6.2	-	-	10	-	359	0.4	5636	6.6	-	-	-	-	-	-	487	0.6	4525	5.2	5012	5.8	90170	104.8	9853	11.5	11.5		
8.	1843	3.0	-	-	10	-	357	0.5	2190	3.5	-	-	-	-	-	-	142	0.2	1969	3.2	2111	3.4	63793	101.6	7327	11.7	11.7		
9.	1549	3.0	-	-	28	0.1	319	0.6	1896	3.7	-	-	-	-	-	-	283	0.6	330	0.6	613	1.2	53407	103.0	3644	7.0	7.0		
10.	2027	7.6	-	-	25	0.1	493	1.8	2545	9.5	16	0.1	7	-	-	-	343	1.3	93	0.3	459	1.7	29118	108.8	6665	24.9	24.9		
11.	1625	3.1	-	-	317	0.6	487	0.9	2429	4.6	-	-	-	-	-	-	29	0.1	1034	1.9	1063	2.0	54199	102.3	7323	13.8	13.8		
12.	657	2.0	-	-	16	0.1	69	0.2	722	2.3	-	-	-	-	-	-	193	0.6	914	2.9	1107	3.5	32488	101.7	1146	3.6	3.6		
13.	206	0.5	-	-	1	-	95	0.3	313	0.8	-	-	-	-	-	-	8	-	268	0.7	486	1.3	782	2.0	3768	101.9	896	2.3	2.3
14.	1044	2.3	-	-	7	-	1069	2.3	2120	4.6	28	0.1	56	0.1	-	-	439	1.0	5053	10.9	5585	12.1	7179	101.9	3113	6.7	6.7		
15.	779	1.8	-	-	3	-	365	0.9	1147	2.7	3	-	17	-	-	-	787	1.8	4221	10.0	4978	11.8	42974	102.2	2888	6.9	6.9		
16.	1017	3.4	-	-	105	0.3	892	3.0	2014	6.7	35	0.1	22	0.1	-	-	36	0.1	5588	11.3	3479	11.5	22132	107.0	2135	7.1	7.1		
17.	1849	5.2	-	-	2	-	552	1.6	2395	6.8	17	0.1	82	0.2	-	-	9	-	3908	11.1	4016	11.4	36466	103.3	2738	7.8	7.8		
18.	6650	16.7	-	-	29	0.1	300	0.8	7019	17.6	-	-	7	-	-	-	63	0.1	148	0.4	218	0.5	40727	101.8	9057	12.7	12.7		
19.	2607	4.7	5	-	5	-	927	1.7	3544	6.4	-	-	-	-	-	-	1676	3.1	10	-	1886	3.1	38265	105.8	1671	20.4	20.4		
20.	3549	8.8	15	-	25	0.1	626	1.6	4015	10.5	-	-	-	-	-	-	663	1.7	171	0.5	834	2.2	42210	110.7	10616	27.8	27.8		
21.	295	1.7	117	0.3	296	0.8	119	0.3	1117	3.1	-	-	-	-	-	-	117	0.3	1597	4.5	1714	4.8	36714	102.5	3089	8.6	8.6		
22.	1198	2.5	20	-	8	-	467	1.0	1693	3.5	1	-	2	-	-	-	325	0.7	2158	4.5	2486	5.2	43938	103.7	5152	10.7	10.7		
23.	2118	6.8	-	-	13	-	467	1.5	2598	8.3	-	-	274	0.9	-	-	307	1.0	3193	10.3	3774	12.2	35657	108.1	5102	16.4	16.4		
24.	2888	7.7	1	-	34	0.1	790	2.1	3713	9.9	20	-	29	0.1	35	0.1	142	0.4	1479	3.9	1703	4.5	41308	110.2	8574	22.3	22.3		
25.	9126	7.8	6	-	41	0.1	788	2.0	3961	9.9	7	-	62	0.2	-	-	176	0.4	2390	6.0	2675	6.6	47006	117.0	5475	13.6	13.6		
26.	2712	11.6	4	-	12	-	392	1.7	3120	13.3	-	-	29	0.1	-	-	79	0.4	2697	11.5	2806	12.0	26795	114.4	5917	16.7	16.7		
27.	2998	6.0	1	-	27	-	461	0.9	3487	6.9	-	-	27	0.1	-	-	914	1.8	3030	6.1	3571	8.0	54205	108.7	6805	13.6	13.6		
28.	2228	5.1	-	-	41	0.1	2224	3.0	4563	6.2	5	-	2	-	-	-	227	0.3	49	0.1	283	0.4	79208	106.9	5924	8.0	8.0		
29.	1795	2.3	-	-	57	0.1	3106	5.3	4558	7.7	18	-	3	-	-	-	316	0.5	95	0.2	415	0.7	64085	107.3	4964	8.3	8.3		
30.	3197	4.9	-	-	104	0.2	3534	5.2	6635	10.3	9	-	-	-	-	-	327	0.5	8	-	344	0.5	70393	108.7	8889	13.7	13.7		

Annexure 2.03 Contd

...A..

Group 'D'

Sr. No.	Wheat Area %	Maize Area %	Gram Area %	Others Area %	Grouptotal Area %		Banana Area %	Mango Area %	Coconut Area %	Sugarcane Area %	Others Area %	Grouptotal Area %		Gross sown area %	Net Irrigated area %											
					Area %	Area %						Area %	Area %	Area %												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
31.	1033	2.6	-	-	75	0.2	590	1.5	1688	4.3	-	-	0.1	-	268	0.7	167	0.4	435	1.1	40523	103.7	2721	7.0		
32.	2197	5.1	-	-	14	-	1247	2.9	3458	8.0	-	-	25	-	222	0.5	185	0.4	432	1.0	47162	108.8	4894	11.3		
33.	1851	301	3	-	20	-	1251	2.1	3125	5.2	-	-	38	0.1	-	426	0.7	1917	3.2	2381	4.0	63166	105.6	6695	11.2	
34.	4332	5.4	2	-	123	0.2	2955	3.7	7412	9.3	-	-	4	-	-	290	0.4	477	0.6	771	1.0	66607	108.8	10955	13.8	
35.	1483	3.4	-	-	34	0.1	5458	1.3	2062	4.8	-	-	-	-	140	0.3	75	0.2	215	0.5	44567	104.7	3153	7.4		
36.	2225	0.9	7	-	12	0.1	243	1.0	487	2.0	-	-	-	-	99	0.4	468	2.0	567	2.4	24288	10.7	1275	5.3		
37.	1527	2.5	1	-	57	0.1	1040	1.7	2625	4.3	-	-	6	-	-	246	0.4	1484	2.4	1736	2.8	69384	103.8	6745	11.0	
38.	1779	3.3	-	-	113	0.2	402	0.7	2294	4.2	-	-	-	-	42	0.1	6315	11.7	6357	11.8	56019	103.6	3298	6.1		
39.	108	0.3	22	0.1	2	-	134	0.4	266	0.8	-	-	-	-	124	0.4	1655	5.3	1779	5.7	31746	100.7	3134	9.9		
40.	680	1.2	-	5	-	261	0.4	946	1.6	-	-	-	-	-	218	0.4	2584	4.5	2602	4.9	52871	100.9	2777	4.8		
41.	5873	8.5	-	30	0.1	983	1.4	6886	10.0	3	28	-	-	-	435	0.6	931	1.4	1395	2.0	77271	109.0	9330	13.5		
42.	2808	4.0	-	73	0.1	388	0.6	3269	4.7	-	164	0.3	-	649	0.9	7865	11.3	8678	12.5	78719	105.6	5244	7.5			
43.	832	1.0	-	15	-	193	0.2	1040	1.2	6	-	24	-	-	73	0.9	6268	7.5	7035	8.4	84473	101.2	3082	3.7		
44.	323	1.3	-	1	-	61	0.2	385	1.5	1	-	17	0.1	-	57	0.1	4861	19.0	4916	19.2	29224	101.5	865	3.4		
45.	832	2.1	8	-	22	0.1	251	0.7	1113	2.9	-	4	-	-	105	0.3	587	1.5	696	1.8	39901	103.0	3814	9.8		
46.	3724	4.5	44	-	23	-	483	0.6	4274	5.1	-	-	-	-	314	0.4	2287	2.7	2581	3.1	87563	105.1	12192	14.6		
47.	4782	9.3	21	-	140	0.3	643	1.3	5586	10.9	-	-	-	-	676	1.3	564	1.1	1240	2.4	57377	112.0	11056	21.6		
48.	1467	2.1	-	-	50	0.1	646	0.9	2163	3.1	-	-	5	-	480	0.7	502	0.7	987	1.4	72467	103.5	5902	8.4		
49.	1947	5.6	-	25	0.1	440	1.3	2412	7.0	-	-	4	-	-	198	0.6	907	2.7	1109	3.3	37076	107.3	3267	9.5		
50.	2507	10.9	2	-	2	-	337	1.5	2848	12.4	-	325	1.4	-	643	2.8	-	968	4.2	28445	123.4	5246	22.8			

Zone 2. 2157 4.2 6 - 63 0.1 684 1.4 2909 5.7 3 - 25 - 5 - 365 0.7 1675 3.4 2073 4.1 53580 105.1 5542 10.9

Area under oil palm plantations and percentage NSA (Average 1968-69 to 1970-71).

Area in hectares
of N.E.A.

Group A short duration Kharif crop; **Group B** long duration Kharif crop;
Group C Rabi crop; **Group D** other crops.

Group 1A

Sr. No.	Talukas.			Paddy			Bajri			Maize			Jowar			Groundnut			Others			Group Total Cotton			Tobacco			Tur			Others			Group Total		
	Area 1.	Area 2.	Area 3.	Area 4.	Area 5.	Area 6.	Area 7.	Area 8.	Area 9.	Area 10.	Area 11.	Area 12.	Area 13.	Area 14.	Area 15.	Area 16.	Area 17.	Area 18.	Area 19.	Area 20.	Area 21.	Area 22.	Area 23.	Area 24.	Area 25.	Area 26.	Area 27.									
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.										

Group
1

1.	Jambkar.	65089	2120	3.3	3601	5.5	4	-	4789	7.4	2	-	9683	14.9	20209	31.1	41213	63.3	56	0.1	880	1.4	74	0.1	42233	64.9
2.	Vagra.	52303	68	0.1	513	1.0	1	-	7683	14.7	3	-	2676	5.1	10924	20.9	30289	57.9	8	-	107	0.2	48	0.1	30452	58.2
3.	Hansd.	24733	328	1.3	229	0.9	-	-	4867	19.7	758	3.1	245	1.0	6427	26.0	14162	57.3	5	-	229	1.0	179	0.7	14575	59.0
4.	Upad.	44369	2068	4.7	574	1.3	49	0.1	10462	23.6	2801	5.4	543	1.2	16098	36.3	18041	40.7	4	-	1270	2.9	89	0.2	19404	43.8
Zao.		46624	1146	2.5	1229	2.6	14	-	6845	14.9	791	1.7	3289	7.1	13414	28.8	25926	55.7	18	-	624	1.3	98	0.2	26666	57.2

damp

Annexure 2.1U

Littoral Soil - Paddy - Mal - Zone.

Area under crop in talukas and percentage MSA (average 1968-69 to 1970-71).

Area in hectares
% - % of MSA

Group A short duration Kharif crop; Group B long duration Kharif crop;
Group C Rabi crop Group D other crops.

Group 'A'

Group No.	Area	Group Total												Group Total												
		Paddy	Bajra	Maize	Jowar	Groundnut	Others	Cotton	Tobacco	Tur	Others	Area														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1. Choryad	36015	1286	3.6	712	2.0	9	-	11236	31.2	2036	5.7	803	2.2	16082	44.7	5409	15.0	2	-	1372	3.8	243	0.7	7026	19.5	
2. Navari	45840	8778	19.1	3	-	-	-	9051	19.7	1384	3.0	790	1.7	20066	43.6	9433	20.6	4	-	661	1.4	477	1.1	10575	23.1	
3. Gadevi	17486	4752	21.2	-	-	8	-	1838	10.5	82	0.5	149	0.9	6829	38.1	1087	6.2	1	-	150	0.9	198	1.1	1436	8.2	
4. Valsad	37689	10133	26.9	-	-	-	-	35	0.1	-	-	1191	3.2	11359	30.2	38	0.1	-	-	169	0.4	283	0.8	460	1.3	
Zone.	34260	6227	18.2	178	0.5	4	-	5540	16.2	875	2.6	734	2.1	13569	39.6	3992	11.6	2	-	588	1.7	300	0.9	4882	14.2	

Group No.	Area	Group Total												Group Total												
		Millet	Gram	Other	Graptotia	Banana	Mango	Cocoanut	Sugarcane	Others	Cotton	Tobacco	Tur		Area											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1.	765	2.1	496	1.4	37	0.1	1518	4.2	2816	7.8	2167	6.0	227	0.6	-	-	134	0.4	8775	24.4	11303	31.4	37227	103.4	9622	26.7
2.	938	2.2	4275	9.3	72	0.2	589	1.2	5914	12.9	104	2.3	798	1.2	-	-	789	1.7	12239	28.2	15570	34.0	52065	113.6	8870	21.8
3.	364	2.2	1440	8.3	64	0.4	306	1.7	2194	12.6	257	1.5	1528	8.7	2	-	566	3.2	7211	41.3	9564	54.7	2023	114.6	376	2.2
4.	242	0.6	3902	10.4	45	0.1	360	1.0	4549	12.1	16	-	4245	11.3	5	-	227	0.6	21375	57.2	26068	69.1	42466	112.7	1931	5.1
Zone.	597	1.7	2528	7.4	55	0.2	688	2.0	3868	11.3	871	2.5	1899	5.0	2	-	429	1.3	12625	56.8	15626	45.6	37945	110.8	5475	16.0

Area under crop in talukas and percentage NSA (Average 1968-69 to 19/0-71).

Area in hectares
% - % of NSA

Group A short duration Kharif crop; Group B long duration Kharif crop;
Group C Rabi crop; Group D other crops.

Sr. No.	Talukas	NSA Paddy Bajri	Group 1												Group 2											
			Area %																							
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.
1.	Ohmandal	26151	1	-	14415	57.3	-	-	8341	33.2	762	3.0	880	3.5	24399	97.0	39	0.1	-	-	-	-	518	2.1	587	2.2
2.	Kalyanpur	82944	44.2	0.5	28625	27.3	60	0.1	18212	21.9	28835	34.8	1832	2.2	7206	86.8	8697	10.9	-	-	-	-	2663	3.2	11660	14.2
3.	Purbadar	62055	47.6	0.8	6490	10.6	54	0.1	11367	18.3	1818	30.3	7778	12.5	44983	72.5	10483	16.9	-	-	-	-	1170	1.9	1653	8.8
4.	Ranavav	26547	147	0.6	4121	16.8	19	0.1	2161	8.8	11380	46.4	3089	12.6	20917	85.2	2805	11.4	-	-	-	-	35	0.1	2840	11.5
5.	Nangd (Jmd.)	39430	361	0.9	2640	6.4	4	-	4771	12.1	21548	54.7	-	7.6	32210	81.7	2575	6.5	-	-	-	-	63	0.2	2628	6.7
6.	Malis (Jmd)	33684	413	1.2	4451	13.2	33	0.1	1957	5.8	26912	74.0	87	0.2	31833	94.5	184	0.5	-	-	-	-	32	0.1	216	0.6
7.	Patan (Ver - avl)	44577	1178	2.7	13742	30.8	12	-	5762	12.9	22286	50.0	430	1.0	43420	97.4	46	0.1	-	-	-	-	111	0.3	157	0.4
8.	Kodinar	34920	802	2.3	12706	36.4	34	0.1	2055	5.9	1066	30.8	1541	4.4	27776	78.5	770	2.2	-	-	-	-	110	0.3	880	2.5
9.	Una	66750	201	0.4	28184	45.1	47	0.1	4468	6.9	19506	30.1	3157	4.9	56654	87.5	2737	4.2	2	-	-	-	278	0.4	3017	4.6
10.	Talaja	53188	498	0.9	18682	35.1	4	-	5150	9.7	23961	45.1	2453	4.6	50758	95.4	124	0.2	-	-	4	-	217	0.4	345	0.6
11.	Jafabad	25396	35	0.2	13057	51.4	23	0.1	3028	11.9	2543	10.0	5440	21.4	24126	95.0	237	1.0	-	-	-	-	52	0.1	289	1.2
12.	Bajla	61052	149	0.2	25863	42.4	71	0.1	6808	11.2	19431	31.8	581	9.3	58013	95.0	539	0.9	2	-	38	0.1	36	-	615	1.0
13.	Nahava	88528	461	0.2	30312	34.2	75	0.1	6354	7.2	39820	45.0	4630	5.2	81652	92.2	1007	1.1	1	-	-	-	122	0.1	1130	1.2
Zone.		49249	404	0.8	15247	31.0	34	0.1	6157	12.6	18804	38.2	3074	6.2	43750	88.9	2350	4.8	-	-	3	-	415	0.8	2768	5.6

annexure 2.1.1 Contd.

Group 'D'

Group 'C'	Group Total												Group Total												Gross C.M.		Net Irrigated Area	
	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%		
1. P. Nilahs. Wheat	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
2. P. G. Jat	185	0.7	-	-	15	0.1	150	0.6	350	1.4	1	-	2	-	-	-	-	-	-	15	0.1	18	0.1	25334	100.7	587	2.3	
3. P. Chaudhary	1766	2.1	-	-	26	0.1	404	0.6	2286	2.8	1	-	2	-	1	-	178	0.2	179	0.2	361	0.4	86313	104.1	5687	6.8		
4. P. Ranaur.	3132	5.1	131	0.2	2853	4.6	1635	2.6	7751	12.5	23	-	94	0.1	55	0.1	41	0.1	1362.2	1549	2.5	68336	106.3	11057	17.8			
5. P. Mangrd.	2239	5.9	142	0.4	318	0.8	669	1.7	378	8.8	56	1.5	1236	3.1	406	1.0	155	0.4	178	4.0	3971	10.0	42287	107.2	9876	25.0		
(Jnd.)																												
6. P. Malia.(Jnd)	2176	6.5	4	-	2	-	608	1.8	2790	8.3	662	2.0	36	0.5	35	0.1	154	0.5	2231	6.6	3268	9.7	38157	113.1	6337	17.9		
7. P. Patel.(Vansari)	1685	3.9	26	-	5	-	170	3.1	3076	6.9	936	2.1	29	0.1	194	0.4	2004	4.5	627	1.4	379	8.5	50443	115.2	8034	18.0		
8. P. Kothar.	1676	4.8	79	0.3	4	-	407	1.4	2256	6.5	32	0.1	115	0.3	-	-	5222	15.0	1071	3.1	6440	18.5	37352	107.0	8107	23.8		
9. P. Uda.	4	3510	5.4	5	-	28	0.1	660	1.0	4203	6.5	31	0.1	139	0.2	138	0.2	3761	5.8	1559	2.4	5628	8.7	69502	107.3	10477	16.8	
10. P. Nisja.	4390	8.3	-	-	50	0.1	324	6.1	7693	14.5	60	0.1	50	0.1	337	0.6	387	0.7	1074	2.1	1908	3.6	60704	114.1	9966	18.8		
11. P. Jafribud.	477	1.9	1	-	43	0.2	39	0.1	560	2.2	-	-	7	-	3	-	29	0.1	935	3.7	974	3.8	25349	102.3	770	3.0		
12. P. Nijla.	1431	2.3	-	-	1	-	172	0.3	1604	2.6	6	-	3	-	2	-	100	0.2	2584	4.2	2635	4.4	63227	103.1	2175	3.6		
13. P. Nahara.	2806	3.2	-	-	20	-	1666	1.9	4501	5.1	26	-	286	0.3	314	0.4	197	-	407	5.5	5679	6.4	92862	104.9	889	6.7		
Total.	2032	4.1	30	0.1	260	0.5	884	1.2	3206	6.5	183	0.4	166	0.3	114	0.2	948	1.9	1456	3.0	2866	5.8	52860	106.8	6285	12.8		

